

MEETING AGENDA
ENVIRONMENTAL PROTECTION COMMISSION
WALLACE STATE OFFICE BUILDING
DES MOINES, IOWA
December 11-12, 1989

Meeting convenes at 10:00 a.m., December 11, 1989 in the fourth floor conference room and if necessary reconvenes on December 12, 8:30 a.m.

Public Participation 11:30 a.m.

Appointments:

Don Etler, Etler Engineering (Item 10) 2:00 p.m.

Break 3:00 p.m.

Kay Norton (Monfort Referral)
Domenic Giammetta (Referral)

3:30 p.m.
4:00 p.m.

1. Approve Agenda
2. Approve Minutes of November 20-21, 1989.
3. Director's Report. (Wilson) Informational.
4. Risk Assessment Study. (Combs) Informational.
 - (a) Dr. Dennis Ward, Monsanto Corporation
 - (b) Dr. Peter Thorne, University of Iowa
5. Proposed Rule--Chapter 119, Disposal, Collection, and Reuse of Waste Oil. (Hay) Informational.
6. Proposed Rule--Chapter 118, Removal and Disposal of PCB Capacitors from White Goods. (Hay) Informational.
7. Financial Status Report. (Kuhn) Informational.
8. Computer Equipment Acquisition for Uncontrolled Hazardous Waste Sites in Solid Waste Program. (Kuhn) Decision.
9. Monthly Reports. (Stokes) Informational.
10. Final Rule--Chapters 60, 61, and 62, Water Quality Standards. (Stokes) Decision.
11. Statutory Mandates and Deadlines. (Combs) Informational.
12. Referrals to the Attorney General. (Combs) Decision.
 - (a) Monfort, Inc. (Des Moines)
 - (b) Domenic Giammetta, d/b/a Fred's 66 (Davenport)
 - (c) Soo Line Railroad Co. (Mason City)
13. 1989 Annual Report: Abandoned or Uncontrolled Disposal Sites and Hazardous Waste Remedial Fund. (Stokes) Informational.

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14. General Discussion Items.
15. Address Items for Next Meeting.

NEXT MEETING DATES

January 16-17, 1990 (Tues & Wed)
February 19-20, 1989
March 19-20, 1989

ENVIRONMENTAL PROTECTION COMMISSION

December 11, 1989

NAME COMPANY OR AGENCY CITY

(please print)

John Kirsch	Gazette	Cedar Rapids
Robin Fortney	Iowa Power	Des Moines
Keith Zuch	Monsanto	"
Griffey	Monsanto	St. Louis, Mo.
Dennis P. Ward	Monsanto	St. Louis Mo.
Carol Rose	DM Register	DM
Teri Dean	WOI TV	Carlisle
John Crossen	Davenport WWTP	Dsm
James Oresnick		Davenport
R. Red Payne	IWPCA	W. Des Moines
Craig Olson	City of Dubuque	Dubuque
Robert B. Mann	City of Newton WWTP	Newton
JANE McALLISTER	AHLERS LAW FIRM	DM
Marilyn Halterman	Sen Demo Staff	Carlisle
Theresa Kehoe		DSM
DAVE Fox	CGA BGR	Ames
George Milligan	City of Cedar Rapids	Cedar Rapids
John Ben	UPI	D.M.

ENVIRONMENTAL PROTECTION COMMISSION

NAME	COMPANY OR AGENCY	CITY
(please print)		
Scott Grau	Lee News Bureau	Des Moines
Kent Soverra	League of Iowa Munic	DSM
Cheryl Darr		Carlisle
DANNY VEST	GROW MARK, INC.	BLOOMINGTON, IL.
Eric Anderson		Spirit Lake IA.
Don Etler	Etler Engr.	Emmetsburg, IA
Don Grammetta	Fret 566	DAU IA

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Minutes of the Environmental Protection Commission Meeting

December 11, 1989

Wallace State Office Building, Des Moines, Iowa

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DECEMBER 1989 COMMISSION MEETING

The meeting of the Environmental Protection Commission was held in the Wallace State Office Building, Des Moines, Iowa, convening at 10:00 a.m. on December 11, 1989.

MEMBERS PRESENT

Mike Earley, William Ehm, Richard Hartsuck, Rozanne King, Charlotte Mohr, Margaret Prahl, Gary Priebe, Nancylee Siebenmann, and Clark Yeager.

ADOPTION OF AGENDA

The following items were added to the agenda:

Appointments:

Kay Norton - 3:30 p.m.

Dominic Giammetta - 4:00 p.m.

Motion was made by Rozanne King to approve the agenda as amended. Seconded by Margaret Prahl. Motion carried unanimously.

ADOPTION OF MINUTES

Richard Hartsuck stated that he would like his comments in regards to the Humboldt County Landfill Commission referral on page 62 included in the minutes. He related that Douglas Marsal expressed criticism of the department inspectors, and he would like the record to show that he expressed support for them. Commissioner Hartsuck's statement was as follows: "the department inspectors are not on trial, their job is to determine that there is, or is not, compliance with the laws fashioned by the legislature and the rules promulgated by the Commission, and in this case there is no indication that the inspectors have done anything other than their duties."

Motion was made by Richard Hartsuck to approve the minutes of November 20-21, 1989 as amended. Seconded by Mike Earley. Motion carried unanimously.

DIRECTOR'S REPORT

Director Wilson distributed copies of a report from the last meeting of the Leopold Center, a report to the Governor on the Environmental Agenda for the 1990's, the DNR Annual Report for FY 1989, and the department's budget. He reported that he will attend an EPA meeting in Washington, D.C. on Tuesday and Wednesday of this week.

RISK ASSESSMENT STUDY

James Combs, Division Administrator, Coordination and Information Division, presented the following item.

Mr. Combs stated that as the Commission went through the adoption of rules regarding cleanup of groundwater contamination there was considerable discussion over what factors the rules included. Some of the factors to be considered were negligible risk levels, action levels and how those levels should be set. The rules were put into place under a statutory mandate by July 1, 1989, and the Commission asked that further investigation be made regarding risk assessment. As a result, a series of discussions have been scheduled to study risk assessment beginning with the first study session today. The major topics to be discussed are: 1) What is risk and how is it assessed; 2) What are the economic costs of remediation for different levels of cleanup (January); 3) The environmental and health impacts for various levels of cleanup (February); 4) Case studies (March); 5) What is an appropriate level of risk (April). When the study sessions are completed the Commission will need to determine whether or not they want to take any further action on the groundwater cleanup rules or any other rules that involve risk assessment. Mr. Combs introduced Dr. Dennis Ward and Dr. Peter Thorne and presented background information on each of them.

APPOINTMENT - DR. DENNIS WARD

Dr. Dennis Ward, Toxicology Manager for Monsanto Company, distributed copies of the overheads used in his presentation entitled "Cancer Risk Assessment and its Application." Dr. Ward thanked the Commission for taking the time to find out what risk assessment is before they set standards. He stated that he has been doing risk assessments on Monsanto's agricultural products for the last four years, mostly interactions with U.S. EPA and the state of California, and so he has a lot of first hand knowledge as it pertains to risk assessments conducted on pesticides. Dr. Ward pointed out that the principles he will

describe would apply not only for pesticides but also for industrial chemicals that might get into the water, and chemicals that might be in the air or in the food chain. He added that the mathematical and chronological principles behind the risk assessment process are the same. He provided details on a number of items in his presentation. Dr. Ward explained that health advisories are usually set by EPA and are based on the margin of safety for non-carcinogenic chemicals. For chemicals that cause cancer the EPA uses negligible risk assessment at a level of $10(-5)$. Maximum contaminant levels are set by EPA Office of Drinking Water and if risk to be caused by a chemical is in the range of $10(-6)$ to $10(-5)$ it is adopted. Dr. Ward suggested that the Commission consider using MCLs under the Safe Drinking Water Act when they are available. He added that MCLs have the federal law behind them, there is a lot of work the EPA puts into developing them, and they are subjected to internal EPA scientific review and are published in the Federal Register for public comment and review. Dr. Ward stated that Health advisories are internal EPA documents that never receive any scrutiny.

(Dr. Ward's presentation is shown on the following 19 pages)

**CANCER RISK ASSESSMENT
AND ITS APPLICATION**

**A PRESENTATION PREPARED FOR:
THE STATE OF IOWA
ENVIRONMENTAL PROTECTION COMMISSION**

PREPARED BY:

**DENNIS P. WARD, PH.D.
MONSANTO COMPANY
DECEMBER 11, 1989**

OVERVIEW

- DEFINE TOXICOLOGY, RISK AND RISK ASSESSMENT
 - DEVELOPING DATA TO ESTIMATE HUMAN RISK
 - EPA RISK ASSESSMENT PROCESS
 - HOW ESTIMATES OF RISK ARE COMPUTED
 - WHAT THE ESTIMATES OF RISK REALLY MEAN
 - WHICH STANDARDS SHOULD BE USED
-

DEFINITIONS

WHAT IS RISK?

- RISK IS THE PROBABILITY OR LIKELIHOOD OF AN ADVERSE EFFECT OCCURRING.

MEASURED RISK VS. PREDICTED RISK:

- MEASURED RISK IS DERIVED FROM OBSERVED OCCURRENCES OF AN ADVERSE EFFECT IN HUMANS.

EXAMPLES: DYING IN AN AIRPLANE CRASH
BEING STRUCK BY LIGHTENING
SUFFERING A HEART ATTACK

- PREDICTED RISK COMMONLY INVOLVES AN ESTIMATION OF THE LIKELIHOOD OF ADVERSE EFFECTS OCCURRING IN HUMANS BASED ON OBSERVATIONS MADE IN ANIMAL TOXICOLOGY STUDIES.

GREATER DEGREE OF UNCERTAINTY IS INVOLVED

WHAT IS TOXICOLOGY?

- TOXICOLOGY IS THE STUDY OF THE ADVERSE EFFECTS OF CHEMICAL AGENTS ON BIOLOGICAL SYSTEMS.

TWO BASIC PRINCIPLES OF TOXICOLOGY:

- ALL CHEMICALS ARE TOXIC.
- THE PROBABILITY AND DEGREE OF INJURY IS DIRECTLY RELATED TO THE AMOUNT OF EXPOSURE TO A CHEMICAL.

ALL SUBSTANCES ARE POISONS; THERE IS NONE WHICH IS NOT A POISON. THE RIGHT DOSE DIFFERENTIATES A POISON AND A REMEDY.

PARACELSUS (1493 - 1541)

RISK ► TOXICITY & EXPOSURE

WHAT IS RISK ASSESSMENT?

- RISK ASSESSMENT IS A SYSTEMATIC PROCESS FOR EVALUATING TOXICITY DATA IN ORDER TO PROVIDE A QUANTITATIVE ESTIMATE OF THE PROBABILITY THAT AN ADVERSE EFFECT WILL OCCUR IN HUMANS UNDER VARIOUS CONDITIONS OF EXPOSURE TO A CHEMICAL.

WHAT IS RISK MANAGEMENT?

- DECIDING WHAT ARE ACCEPTABLE LEVELS OF RISK AND ESTABLISHING CONTROLS TO MAINTAIN RISKS AT ACCEPTABLE LEVELS.
-

DEVELOPING DATA TO ESTIMATE HUMAN RISK

EPIDEMIOLOGY STUDIES

- A STUDY OF THE RELATIONSHIP OF VARIOUS FACTORS THAT INFLUENCE HUMAN DISEASE.

ANIMAL TOXICOLOGY STUDIES

- LABORATORY ANIMALS USED AS SURROGATES FOR HUMANS.
- PURPOSE ANIMAL TESTS:
 - 1) IDENTIFY TOXIC PROPERTIES OF THE CHEMICAL
 - 2) DEFINE DOSE-RESPONSE RELATIONSHIP
 - 3) IDENTIFY 'NO ADVERSE EFFECT LEVEL'

- **CANCER STUDIES ARE USUALLY CONDUCTED WITH RATS AND MICE:**
 - 1) **MULTIPLE GROUPS OF 50 - 100 ANIMALS**
 - 2) **MULTIPLE DOSE LEVELS USED**
 - 3) **LIFETIME EXPOSURE**
- **ASSUMPTION: IF A CHEMICAL IS CARCINOGENIC IN ANIMALS IT HAS THE POTENTIAL TO PRODUCE CANCER IN HUMANS.**

OPTIONS FOR REGULATING CHEMICAL CARCINOGENS?

- **BAN THEM ALL**
- **ESTABLISH ADEQUATE "MARGINS OF SAFETY"**
- **SET RISK ASSESSMENT BASED STANDARDS**

U.S. EPA RISK ASSESSMENT PROCEDURE

1) HAZARD IDENTIFICATION:

(CATEGORIZE CHEMICAL FOR HUMAN CARCINOGENIC
POTENTIAL)

2) DOSE RESPONSE ASSESSMENT:

(LINEARIZED MULTISTAGE MODEL)

3) EXPOSURE ASSESSMENT

4) RISK CHARACTERIZATION:

(POTENCY x EXPOSURE = UPPER BOUND RISK)

**EPA SCHEME FOR CATEGORIZING OVERALL
WEIGHT OF EVIDENCE FOR HUMAN CARCINOGENICITY**

GROUP A -- HUMAN CARCINOGEN

- **BASED ON SUFFICIENT HUMAN EVIDENCE**

GROUP B -- PROBABLE HUMAN CARCINOGEN

- **BASED ON LIMITED HUMAN EVIDENCE (B1)**
- **BASED ON SUFFICIENT ANIMAL EVIDENCE (B2)**

GROUP C -- POSSIBLE HUMAN CARCINOGEN

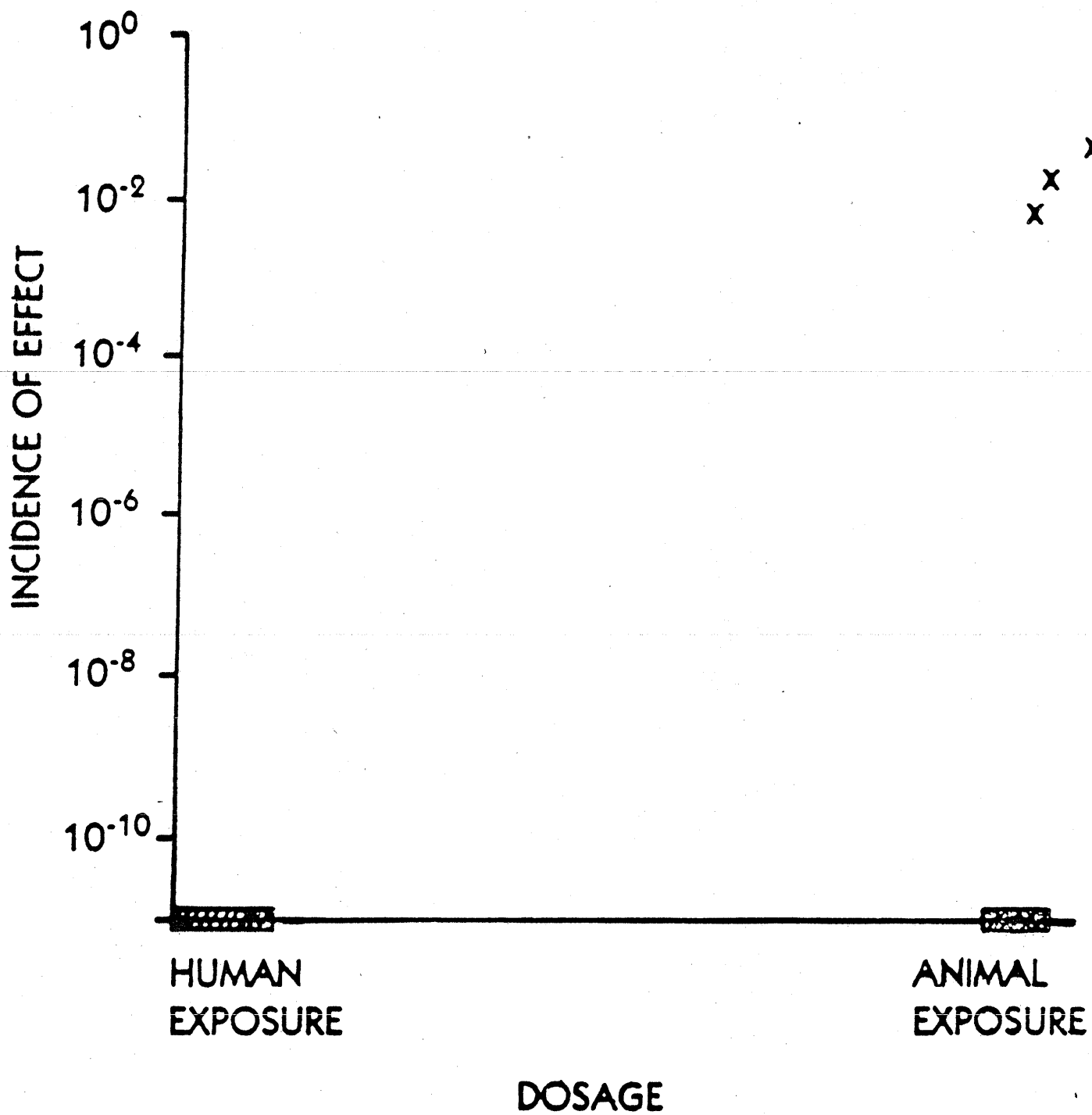
- **BASED ON LIMITED ANIMAL EVIDENCE**

GROUP D -- NOT CLASSIFIABLE

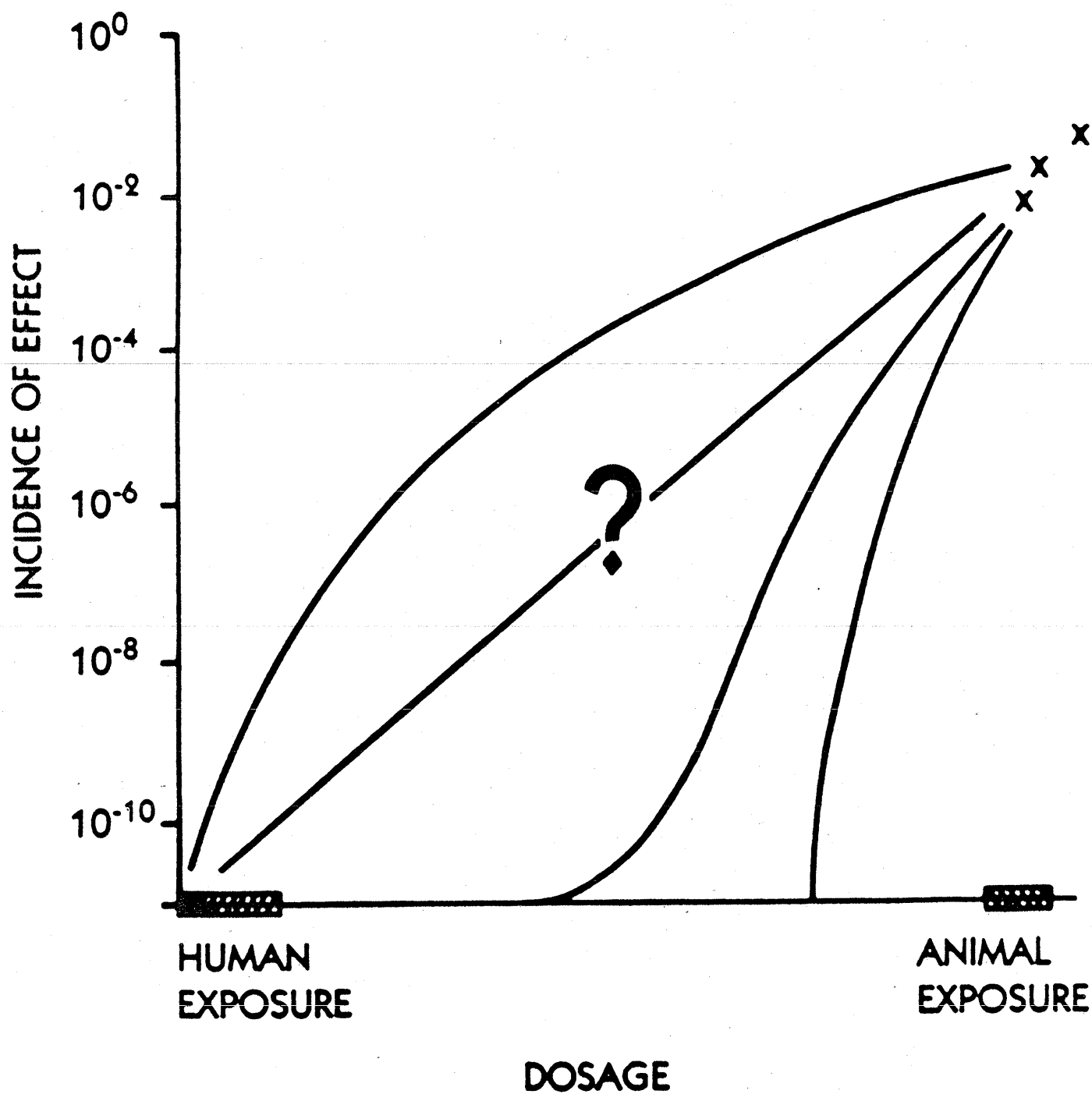
- **INADEQUATE EVIDENCE / NO DATA**

GROUP E -- NON-CARCINOGENIC FOR HUMANS

- **SUFFICIENT HUMAN AND/OR ANIMAL EVIDENCE**



QUANTITATIVE RISK MODELING



**MATHEMATICAL "MODELS" ARE USED TO EXTRAPOLATE FROM
THE HIGH LEVELS OF EXPOSURE GIVEN TO ANIMALS DOWN TO
THE LOW LEVELS OF ANTICIPATED HUMAN EXPOSURE.**

MANY MODELS ARE AVAILABLE:

LOG-PROBIT

MANTEL-BRYAN

LOGIT

WEIBULL

ONE-HIT (LINEAR)

GAMMA MULTIHIT

MULTISTAGE (ARMITAGE-DOLL)

LINEARIZED MULTISTAGE

PHARMACOKINETIC MODELS

TIME-TO-TUMOR MODELS

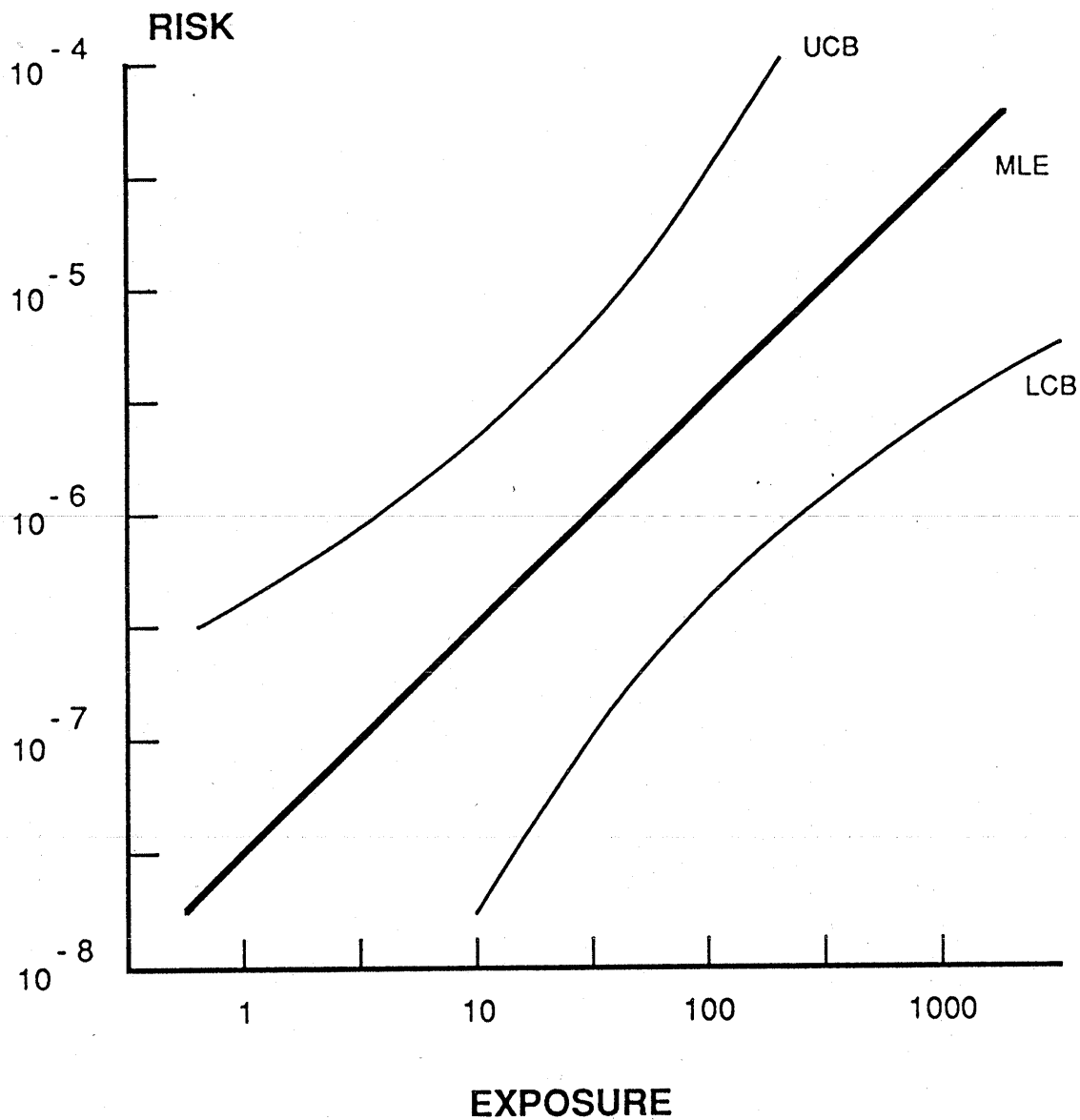
THE U.S. EPA HAS CHOSEN TO USE THE "LINEARIZED
MULTISTAGE MODEL" IN ALMOST ALL CASES.

THE LINEARIZED MULTISTAGE MODEL PREDICTS AN UPPER 95%
CONFIDENCE BOUND FOR THE MAXIMUM LIKELIHOOD ESTIMATE
(MLE) OF RISK.

*"IT SHOULD BE EMPHASIZED THAT THE LINEARIZED MULTISTAGE
PROCEDURE LEADS TO A PLAUSIBLE UPPER LIMIT TO THE RISK THAT IS
CONSISTENT WITH SOME PROPOSED MECHANISMS OF CARCINOGENESIS.
SUCH AN ESTIMATE, HOWEVER, DOES NOT NECESSARILY GIVE A REALISTIC
PREDICTION OF THE RISK. THE TRUE VALUE OF THE RISK IS UNKNOWN,
AND MAY BE AS LOW AS ZERO.*

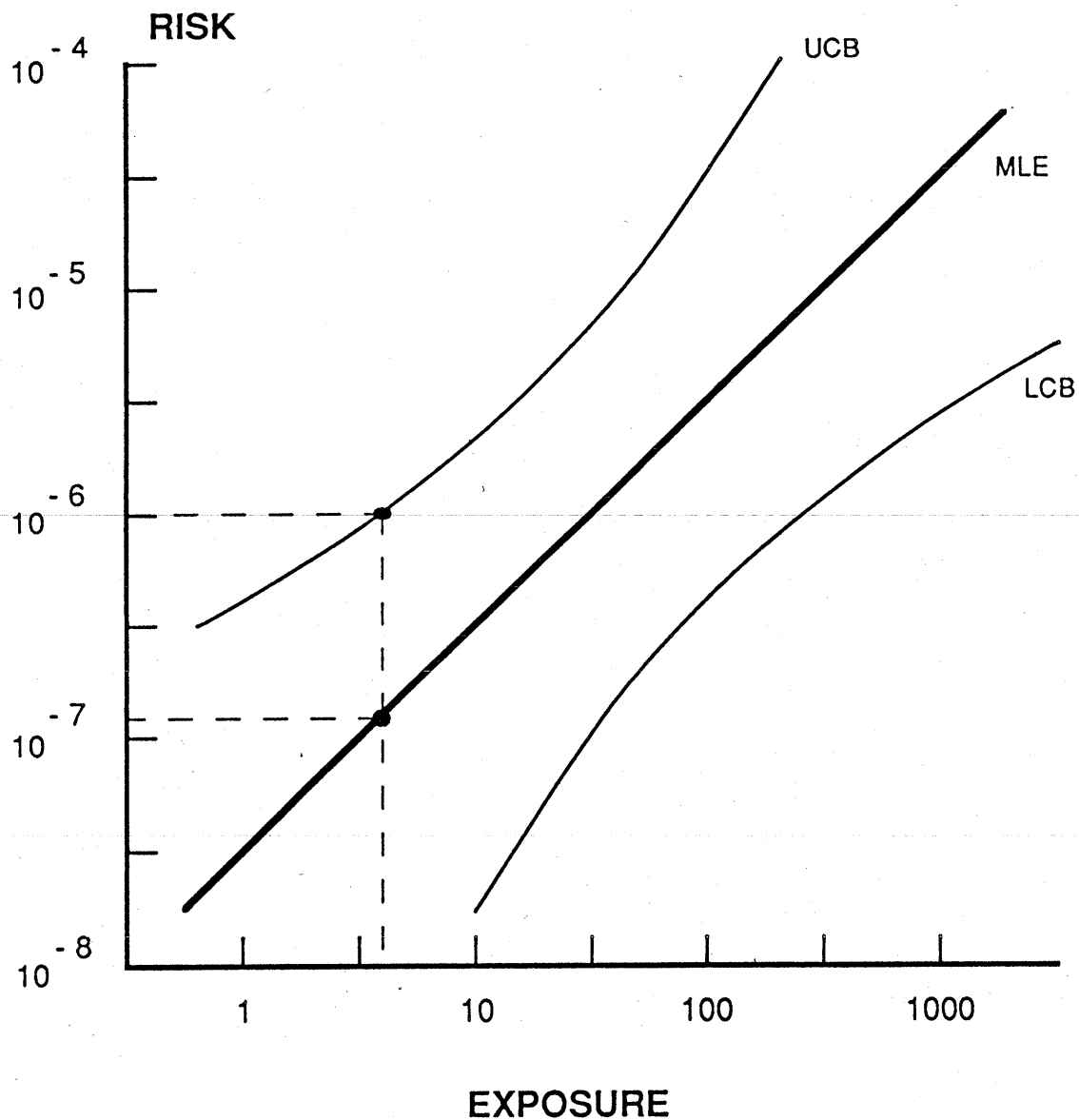
EPA GUIDELINES FOR CARCINOGEN RISK ASSESSMENT (1986)

BEST ESTIMATES OF RISK VS. UPPER AND LOWER BOUND ESTIMATES OF RISK



UCB - UPPER CONFIDENCE BOUND
MLE - MAXIMUM LIKELIHOOD (BEST) ESTIMATE
LCB - LOWER CONFIDENCE BOUND

BEST ESTIMATES OF RISK VS. UPPER AND LOWER BOUND ESTIMATES OF RISK



UCB - UPPER CONFIDENCE BOUND
MLE - MAXIMUM LIKELIHOOD (BEST) ESTIMATE
LCB - LOWER CONFIDENCE BOUND

COMPUTATION OF RISK ESTIMATE

MATHEMATICAL MODEL PROVIDES A "POTENCY ESTIMATE"

- DIMETHYL-DOORKNOB POTENCY ESTIMATE:

$$0.01 \text{ (mg/kg/day)}^{-1}$$

- $0.01 \text{ (mg/kg/day)}^{-1} \times \text{EXPOSURE} = \text{RISK}$

SETTING A RISK ASSESSMENT BASED STANDARD FOR WATER
AT THE 1 / 1,000,000 RISK LEVEL:

- ASSUME HUMAN WATER CONSUMPTION =
2 LITERS PER DAY (2 L/day)
- ASSUME AVERAGE HUMAN WEIGHS 70 kg

$$\frac{(C) \times 2 \text{ L/day}}{70 \text{ kg}} \times (0.01) = 1 \times 10^{-6}$$

- WATER CONCENTRATION, (C) =
4 $\mu\text{g/L}$ OR 4 ppb

WHAT ESTIMATES OF RISK REALLY MEAN

THESE MATHEMATICAL MODELS ESTIMATE THE EXCESS LIFETIME RISK FOR AN INDIVIDUAL OR A POPULATION.

1 IN A MILLION EXCESS RISK:

$$\frac{1}{1,000,000} = 0.000001 = 1 \times 10^{-6} = 10(-6)$$

THE SCIENTIFIC COMMUNITY AND U.S. REGULATORY AGENCIES (EPA AND FDA) GENERALLY RECOGNIZE RISKS OF 10^{-5} AND BELOW AS BE "NEGLIGIBLE".

IN THE U.S. THE RISK OF GETTING CANCER FROM ANY CAUSE IS APPROXIMATELY 0.3 (i.e. 30 %).

RISK FOR A HYPOTHETICAL MAXIMALLY EXPOSED INDIVIDUAL:

- **AN INDIVIDUAL THAT DRINKS 2 L OF WATER PER DAY CONTAINING 4 ppb OF DIMETHYL-DOORKNOB FOR A LIFETIME WILL INCREASE THEIR RISK OF GETTING CANCER FROM 0.3 TO 0.300001.**

RISK FOR A HYPOTHETICAL MAXIMALLY EXPOSED POPULATION:

- **FOR A POPULATION OF 1,000,000 PEOPLE THAT EACH DRINK 2 L WATER PER DAY CONTAINING 4 PPB OF DIMETHYL-DOORKNOB OVER A LIFETIME, THE EXPECTED NUMBER OF CANCERS WOULD BE EXPECTED TO INCREASE FROM 300,000 TO 300,001.**

CONCLUSIONS

QUANTITATIVE RISK ASSESSMENT IS A TOOL THAT IS AVAILABLE TO RISK MANAGERS FOR REGULATING CHEMICALS.

RISK MANAGERS MUST DECIDE WHAT LEVELS OF RISK ARE ACCEPTABLE FOR SOCIETY.

THE QUANTITATIVE RISK ASSESSMENT METHODOLOGY CURRENTLY BEING USED IS VERY CONSERVATIVE AND LEADS TO "OVER ESTIMATES" OF RISK.

EXPOSURE LEVELS CORRESPONDING TO 10^{-6} LEVELS OF RISK ARE ON AVERAGE 400,000 TIMES LOWER THAN THE LEVELS OF EXPOSURE CAUSING CANCER IN ANIMAL STUDIES.

CONSIDERABLE EFFORT AND SCIENTIFIC REVIEW GOES INTO THE SETTING OF FEDERAL MCL'S AND ARE APPROPRIATE FOR ESTABLISHING SAFE DRINKING WATER STANDARDS.

APPOINTMENT - DR. PETER THORNE

Dr. Peter Thorne, Toxicologist from the University of Iowa College of Medicine, expressed thanks to the Commission for the opportunity to address them and related that it is admirable that they take the time to get a better understanding of some of the issues.

Dr. Thorne presented the following written statement shown on the next six pages.

QUANTITATIVE RISK ASSESSMENT: AN IMPORTANT POLICY TOOL

Peter S. Thorne, Ph.D.

The University of Iowa, College of Medicine
Department of Preventive Medicine and Environmental Health
11 December 1989

Humans are apparently the only animals that have the capacity to worry and make choices on the basis of their worries. Risk assessment is the quantification of our worries about toxicants and other hazards. Risk management is the policy that is formulated on the basis of the assessment so as to balance our worries about disease or premature death from various hazards. Risk assessment with all its refinements and assumptions, its successes and failures, has become an essential part of the regulatory process.

Although it has been over 200 years since the first recognition of occupationally-induced chemical carcinogenesis, risk assessment is relatively new. In the three decade history of quantitative risk assessment great strides have been made, particularly in the area of chemical hazards. As our understanding of toxicokinetics and biochemical mechanisms of disease has grown, so has the accuracy of risk assessment and risk extrapolation.

We have 60,000 chemicals in commercial use in the U.S. with 1000 new chemicals introduced each year (National Academy of Sciences, 1984). Despite this huge number of chemicals to which we are potentially exposed, we currently classify 22 as known human carcinogens and 140 as suspected human carcinogens (NTP, 5th Annual Report). It is FALSE to think that "everything causes cancer" and it is also FALSE to think that one can induce tumors with "any chemical" if a high enough dose is administered. We are NOT experiencing a cancer epidemic due to industrial chemicals. We must recognize, however, that there are chemicals in common use that are causing cancer in humans at the current

levels of exposure. Thus, we must be prudent in our estimation of the risks and concern ourselves with erring on the side of underestimation of the risks, as such a risk could result in serious health consequences that would not be reflected in the development of the actual tumors until several decades after the beginning of exposure.

Determination of an acceptable level of risk is a difficult and complicated issue and one for which a consensus is often difficult to achieve. A value that is typically used for an acceptable level of involuntary risk is 1 in a million. Since 2 million people die each year in the U.S. and 18% of those deaths are attributable to cancer we have about 360,000 cancer deaths annually. At a risk level of 1 in a million we would end up with 360,002 cancer deaths instead of 360,000. This means that exposure to that compound at the regulated acceptable concentration over an entire life increases your cancer risk by a minuscule amount. However, it is essential to understand that as we discuss risk assessment we are talking about a single chemical and supposing that we live in a world where we are exposed to only that chemical. If we suppose we are exposed to just nineteen chemical carcinogens, each with an individual lifetime risk of 1 in a million, and we assume simple additivity of toxic effects, we suddenly find ourselves in the 1 in 10,000 category of risk. For this reason, federal cancer policies have used 1 in a million as the level at which action should be taken. Further, since we have tested so few of the 60,000 chemicals in use, it is hoped that when we regulate one compound we end up regulating a whole class of compounds, all of which have carcinogenic risks associated with them.

At a 1985 meeting of experts in the field of risk assessment Roy E. Albert of the Institute of Environmental Medicine at New York University stated the following in 1985:

"... quantitative risk assessment ... probably provides a very good upper limit of risk; namely, it's very unlikely that the risk is higher than predicted by the linear extrapolation model. When you get upper limit estimates that are negligible, everybody feels quite reassured. ... if the risk is not negligible you do something about it."

In Table 1 and 2 I have tabulated some of the major problems and accomplishments related to quantitative risk extrapolation and assessment.

TABLE 1

Major Problems Related to Risk Extrapolation¹

1. Extrapolation of data obtained at high dose to the predicted risk at low dose.
2. Extrapolation from experimental animals (usually rodents) to humans.
3. Extrapolation from a subset of the human population (e.g. healthy workers) to the general population or to another subset (e.g. children).
4. Extrapolation from a well-defined experimental exposure protocol to a very complex human, mixed-exposure, variable-dose environment.
5. Variations between humans due to inherited or acquired susceptibility factors.
6. Most studies are designed to identify whether or not a substance is a carcinogen rather than to establish the carcinogenic potency.

¹ Portions modified from Weinstein, I.B. In: Risk Quantitation and Regulatory Policy (D.G. Hoel, R.A. Merrill, F.P. Perera, Eds.) Cold Springs Harbor Lab., 1985, pg. 343-4.

TABLE 2

Major Accomplishments Related to Risk Assessment

1. Improved methodology for human epidemiology studies:
 - a) Cancer and disease registries
 - b) Major long-term prospective epidemiological studies
 - c) Continued surveillance of populations exposed through accidents.
2. Improvements in biostatistical methods which enhance the "statistical power" to identify carcinogens and carcinogenic potency.
3. Development of inbred strains of rodents and pathogen-free animal housing techniques which reduce variability and confounding illness or virally-induced tumors.
4. Development of improved in vitro screening assays for mutagens.
5. Development of immunoassays for identification of biomarkers and carcinogen-DNA adducts necessary for population monitoring.
6. Consolidation of the methods used by various governmental agencies to provide consistency in regulation.
7. Improved understanding of molecular mechanisms, dose-response functions, population heterogeneity, and species differences

Benzene Risk Assessment and Risk Management

Benzene offers an example where the risk management strategy is predicated to a great extent on the assessment of the risk. It also offers us a case where the evidence implicating benzene as a human carcinogen are overwhelming. As I will illustrate, the carcinogenic potency of benzene, as determined from animal studies, agrees closely with data from human studies.

Benzene has been shown in humans, rats, and mice, to produce aplastic anemia, which is an overall reduction in the numbers of blood cells which, with further exposure, can develop into acute myelogenous leukemia. Human data on the carcinogenic potency of benzene has come from three principal sources: a mortality study of workers exposed to benzene in the manufacture of rubber, a mortality study of benzene-exposed workers at Dow Chemical Company, and a study of a benzene epidemic in Turkey where leather workers were exposed to benzene in glue. Animal data were obtained from several studies including several performed by the National Toxicology Program.

A description of benzene risk assessment provided by Bernard D. Goldstein of the U.S. E.P.A. in 1985 listed the data in Table 3 which demonstrates the correlation of the human and animal carcinogenesis data. Table 4 illustrates the risk management evaluation. The last two listings in Table 4 were withdrawn from intent to regulate because it was judged that regulating these benzene sources would not be worth the costs involved.

TABLE 3
Risk Assessment for Benzene

<u>Human Data</u>	<u>Lifetime Risk per ppm exposure</u>
Ohio rubber workers	1.33×10^{-2}
Turkish leather workers	1.82×10^{-2}
Dow Chemical workers	4.64×10^{-2}

geometric mean	2.2×10^{-2}
<u>Animal Data*</u>	
Female Rats (Maltoni et al 1980)	3.4×10^{-2}
Male Rats (NTP 1984)	2.0×10^{-2}
Female Rats (NTP 1984)	3.3×10^{-2}
Male Mice (Snyder et al 1980)	1.4×10^{-2}

geometric mean	2.4×10^{-2}

* The rats were exposed by gavage feeding while the mice were exposed to benzene by inhalation.

TABLE 4
Risk Management Regulation Decisions for Benzene

Source Category	Number of Facilities	Emissions, mega-gm/yr		Annual Cancer Cases			Cost (millions)	
		Before	After	Before	After	Diff.	Capital	Annual
Benzene fugitive	229	7900	2500	0.45	0.14	0.31	\$ 5.5	\$ 0.4
Coke by-product	55	29000	3500	2.60	0.23	2.37	\$30.9	\$-1.3
Maleic anhydride	3	960	120	0.029	0.016	0.013	\$ 6.4	\$ 2.8
Benzene storage	126	620	400	0.043	0.028	0.015	\$ 7.3	\$ 1.3

Dr. Thorne expanded on details of the problems listed in Table 1 and the accomplishments related to risk assessment as listed in Table 2.

Clark Yeager asked Dr. Thorne to address the risk levels of 10(-6) and 10(-5) in terms of regulation.

Dr. Thorne stated that for screening, saying which hazards should be considered further, the one in a million should be used. When it comes to telling a company that they have to spend "X" millions of dollars, one should look at the best available control technology and consider the benefits as well as the costs of taking that action. He added that if it is between the 10(-5) and 10(-6) risks perhaps it is not appropriate to take action. Dr. Thorne stated that it is not reasonable to tell a company they have to go out of business because they cannot get below the one in a million risk level. In his opinion there should be some flexibility to allow for reasonable consideration of the risk assessment in terms of costs and benefits.

A brief discussion followed.

Mr. Combs asked that follow-up questions be sent to him or Director Wilson to be put in a letter to Dr. Thorne and Dr. Ward along with any questions from staff.

PUBLIC PARTICIPATION

Chairperson Mohr announced that Public Participation would be delayed to coincide with Item #10, Final Rule on Water Quality Standards, since each speaker indicated they would like to address that specific item.

PROPOSED RULE--CHAPTER 119, DISPOSAL, COLLECTION, AND REUSE OF WASTE OIL

Teresa Hay, Division Administrator, Waste Management Authority Division, presented the following item.

The department requests that the Commission review the proposed rules concerning the disposal, collection, and reuse of waste oil. The purpose of these rules is to implement Section 6(6) of H.F. 753, the Waste Volume Reduction and Recycling Act of the 1989 Iowa Acts, which mandates the development of rules necessary to implement a strategy for waste oil. The Act, as codified at 455D.13, prohibits sanitary landfills from accepting waste oil for final disposal. In addition, a person offering for sale or

selling oil at retail shall either accept waste oil from customers or post notice of locations where a customer may dispose of waste oil. The proposed rules:

- encourage the recycling of waste oil by allowing sanitary landfills to collect waste oil if its ultimate disposition is for recycling and reuse.
- establish operating requirements for waste oil collectors including tank design and collection supervision.
- require oil retailers to post signs encouraging the collection of waste oil for recycling.
- require oil retailers who choose not to collect waste oil to post a sign identifying a conveniently located collection site.
- encourage cooperation between retailers to identify waste oil collection sites.
- require the Waste Management Authority Division to encourage the collection of waste oil for recycling through public education efforts.
- encourage state procurement and purchase of recycled oil products.

(Proposed rule shown on the following 4 pages)

ENVIRONMENTAL PROTECTION COMMISSION [567]
Notice of Intended Action

Pursuant to the authority of Iowa Code section 455D.6(6) and 455D.7(1) (1989 Iowa Acts, House File 753), and 455B.304, the Environmental Protection Commission of the Department of Natural Resources intends to adopt Chapter 119, "Waste Oil," Iowa Administrative Code.

These rules are intended to regulate the disposal and collection of waste oil, as well as to encourage the recycling and reuse of waste oil by both the private and public sectors.

Any interested person may file written comments or suggestions on the proposed rules through March 13, 1990. Such written comments should be directed to Robert Craggs, Iowa Department of Natural Resources, Wallace State Office Building, 900 East Grand, Des Moines, Iowa 50319-0034.

Persons may also convey their comments orally by contacting Robert Craggs by phone at 515/281-8408. In addition, persons are invited to present oral or written comments at public hearings which will be held on March 14, 1990 at 1:30 p.m. in the fifth floor west conference room of the Department of Natural Resources, Wallace State Office Building, 900 East Grand, Des Moines, Iowa; on March 15, 1990 at 1:30 p.m. at the Iowa Geological Survey, Trowbridge Hall, 123 North Capitol, Iowa City, Iowa; and on March 16, 1990 at 7:30 p.m. at the Council Bluffs Community Hall, 205 South Main, Council Bluffs, Iowa.

Copies of the proposed rules may be obtained from the Records Section, Iowa Department of Natural Resources, Wallace State Office Building, 900 East Grand, Des Moines, Iowa 50319-0034.

In accordance with Iowa Code section 17A.31, notice is hereby given that these rules may have an impact on small businesses.

These rules are intended to implement Iowa Code section 455D.6(6) and section 455D.13, and 455B Division IV, Part I.

Chapter 119
Proposed Rules on Waste Oil

567--119.1(455D, 455B) Authority, purpose, and applicability.

119.1(1) Authority. Pursuant to Iowa Code sections 455D.6(6) and 455D.7(1), and 455B.304, the environmental protection commission is given the authority to adopt rules regulating the disposal, collection, and reuse of waste oil.

119.1(2) Purpose. The purpose of these rules is to protect the public health and the environment by regulating the disposal and collection of waste oil and to promote the reuse of oil which is a limited energy resource.

119.1(3) Applicability. The provisions of this chapter apply to oil retailers, sanitary disposal project permittees, and persons involved in the collection of waste oil.

567--119.2(455D, 455B) Definitions. The following definitions apply to the provisions of this chapter:

"Consumer" means any individual who purchases oil or generates waste oil for personal or family purposes, including a farmer or a farm household.

"Contaminated" means waste oil mixed with hazardous waste as defined by the Resource Conservation and Recovery Act or with incompatible wastes, other than minimal amounts of vehicle fuel, including but not limited to antifreeze, solvents, paints, pesticides, or household hazardous materials.

"Department" means the department of natural resources.

"Division" means the waste management authority division of the department.

"Lubricating oils" means engine lubricating oils, hydraulic fluids and gear oils, excluding marine and aviation oils.

"Recycling" means the preparation of used oil for reuse as a petroleum product by rerefining, reprocessing, reclaiming, or other means or to use used oil as a substitute for a petroleum product made from new oil, provided that the preparation or use is operationally safe, environmentally sound, and complies with all federal and state laws.

"Retailer" means a person offering for sale or selling a petroleum-based or synthetic oil to the ultimate consumer or user of the product, as an over-the-counter product or whereby the consumer is charged separately for the oil product when coupled with a service.

"Tank" means a stationary device designed to contain an accumulation of waste oil and constructed of nonferrous materials (e.g., concrete, steel, plastic) that provide structural support.

"Waste oil" means any petroleum-based or synthetic oil which through its use, storage, or handling has become contaminated with chemical or physical impurities or is no longer suitable for its original purpose. Waste oil includes but is not limited to the following:

- 1) Spent lubricating fluids which have been removed from an engine crankcase, transmission, gearbox, or differential of an automobile, bus, truck, vessel, plane, heavy equipment, or machinery powered by an internal combustion engine.

- 2) Spent industrial oils, including compressor, turbine, bearing, hydraulic, metalworking, electrical, and refrigerator oils.

Waste oil does not include oil which has been contaminated or contains PCBs of 5ppm or greater.

"Waste oil collection site" means any commercial, municipal, or nonprofit establishment or operation which has a waste oil collection tank on the premises, and accepts waste oil for temporary storage prior to the recycling of that which is collected.

567--119.3(455D, 455B) Prohibited disposal.

119.3(1) Waste oil shall not be accepted for final disposal at any sanitary landfill; however, a sanitary landfill or sanitary disposal project, as defined in section 455B.301 of the Iowa Code, may accept waste oil for temporary storage or collection if the ultimate disposition of the oil is for recycling. All necessary permits or permit conditions must be obtained prior to the storage or collection of waste oil at these landfills and projects.

119.3(2) Waste oil may continue to be used for road oiling, dust suppression, and weed control in accordance with Chapter 143.

567--119.4(455D, 455B) Operational requirements.

119.4(1) Collection. Sanitary landfill operators, sanitary disposal project operators, commercial waste oil collectors, oil retailers, or other individuals who choose to collect waste oil from customers shall comply with the following requirements:

- a) Waste oil must be accepted which is contained in a closed, unbreakable, preferably reusable, container of a maximum quantity of five gallons, provided that waste oil collectors may accept larger quantities if they so choose.

- b) Supervision of the collection process to minimize the risk of spills and to prevent customers from depositing contaminated waste oil into the collection tank must be provided.

c) Waste oil must be accepted during hours convenient for the customer. During non-collection hours, the tank must be secured to prevent the contamination of the collected waste oil.

d) A sign must be placed on or near the waste oil collection tank which includes the information that this tank is for waste oil collection only and the depositing of other materials is prohibited.

e) Collectors of waste oil must ensure that the ultimate disposition of waste oil collected is for recycling and reuse.

f) There is no obligation to accept contaminated oil from the consumer.

g) Retailers must accept waste oil generated by residential households or farmers, but they are not required to collect waste oil from commercial or municipal establishments, shall be accepted.

h) Retailers must place a sign must be placed near the point of sale which informs the customer that it is unlawful to dispose of waste oil at a sanitary landfill, and that the customer should return their waste oil to waste oil collection sites for recycling and reuse.

119.4(2) Retailers who choose not to collect waste oil shall post a durable, legible sign at least 8-1/2" by 11" in size and containing the following information:

a) The language "RECYCLE USED OIL" in bold lettering;

b) A list of the benefits from recycling waste oil including but not limited to "conserves energy, reuses limited resources, and protects Iowa's drinking water;"

c) At least two inches in length, the federal environmental protection agency's oil recycling symbol as shown below;

d) The language "used oil is a household hazardous material" and, at least two inches in length, the household hazardous materials program symbol as shown below;

e) The groundwater protection hotline telephone number referenced as a source for more information on used oil recycling;

f) The warning that the disposal of waste oil in a landfill, or its deposit or discharge into any state waterway is unlawful.

g) The name, address and location of at least one used oil collection site located within the county in which the retailer is located. If there is more than one used oil collection site located in the applicable county, then the nearest collection site shall be listed on the posted sign.

Retailers shall ensure that the mandated signs are located according to the provisions listed above. Retailers may obtain the required signs upon request from the department. As an alternative, retailers may print their own signs provided that they are at least 8-1/2" by 11" in size and contain the information stipulated above. Retailers choosing to print and post their own signs must obtain a variance from the departmental rules. To request a variance, retailers should forward to the division the sign they wish to substitute for the departmental sign.

119.5(1) Above-ground. In addition to the requirements imposed by the office of the state fire marshal, the following standards are applicable to above-ground waste oil collection tanks:

a) The tank must be of sufficient size to handle the projected quantities of used oil to be returned to this specific collection site.

b) The tank shall be designed and maintained to prevent the spillage or discharge of waste oil. Tanks must be set upon a layer of sand or gravel at least three inches thick or engineered using an impervious barrier to contain potential spills.

c) Absorbent material shall be available at the tank site for use by the operator to control waste oil spillage or discharge.

d) The tank must have a level gauge or some other adequate means for checking the oil level within the tank.

e) The tank must be constructed of a non-corrosive material, or treated as to make the tank non-corrosive.

119.5(2) Underground. Underground storage tanks used to collect or store waste oil shall comply with the standards in Iowa Code Chapter 455B.471 entitled "Underground Storage Tanks," and the promulgated rules, Iowa Administrative Code, Chapters 567--135 and 136.

567--119.6(455D, 455B) Locating collection sites. If the retailer is unaware of any locations within the county where waste oil is being accepted from customers, then the retailer shall cooperate with other retailers to identify a waste oil collection site for customers. To identify a waste oil collection site, retailers should consider recruiting an operator of a facility which already has the means to collect waste oil. If through this cooperative effort no sites can be identified, then the retailer should consider accepting waste oil from customers according to the standards listed in this chapter.

567--119.7(455D, 455B) Waste management authority division responsibilities.

119.7(1) Groundwater protection hotline. The division will promote the recycling of used oil through the continued staffing of the groundwater protection hotline. Staff will provide general information, distribute written materials concerning waste oil recycling, and maintain an updated, statewide list of waste oil collection facilities. Using the groundwater protection hotline, customers should contact division staff to determine environmentally acceptable disposal methods for contaminated waste oil.

119.7(2) County coordinators. The division will designate, when feasible, waste oil recycling coordinators for each county to promote waste oil recycling, to identify existing waste oil collection sites, and to help establish additional collection sites.

567--119.8(455D, 455B) State procurement. State officials shall promote the procurement and purchase of recycled oil for use as engine lubricants in state vehicles, as hydraulic and gear lubricants for heavy equipment and machinery, and as a fuel oil for back-up heating systems at state facilities with fuel oil heating systems. When a state or local agency uses appropriated federal funds to purchase \$10,000 or more of lubricating oils during a fiscal year, then the agency using the appropriated funds shall purchase oil composed of the highest percentage of rerefined oil as practicable. Purchases made using federal funds must comply with the federal procurement guidelines promulgated as 40 CFR Part 252.

Date

Larry J. Wilson, Director

Ms. Hay explained that the original version of the legislation mandated that a retailer who sold oil would also have to accept used oil. It was changed to give retailers an option to either accept used oil or post a sign identifying a collection site.

Margaret Prah1 stated that she has some problems with the comprehensibility and enforcement of the rules as written, particularly in regards to 119.4(1)a, 119.4(1)g, 119.5(1)a, and 119.4(2)g. In 119.5(1)a, Commissioner Prah1 questioned the intent of "sufficient size" in regards to the tank, and in 119.4(2)g she questioned whether a variance process is needed for sign size. Commissioner Prah1 stated that she feels the rules illustrate a problem which occur throughout the rules, whereby a user who wants to comply has a terrible time reading the rules and determining what they have to do to comply. She remarked that five pages of rules are not needed to say retailers must collect used oil or post a sign identifying a collection site.

Gary Priebe stated that he has a problem with 119.4(1)a in regards to the five gallon maximum quantity container because of the possibility that collectors may refuse to take waste oil in larger containers. He noted that most farmers will not haul their waste oil in five gallon containers.

Discussion followed regarding recycled oil uses and hauling recycled oil out of state.

This was an informational item; no action was required.

PROPOSED RULE--CHAPTER 118, REMOVAL AND DISPOSAL OF
POLYCHLORINATED BIPHENYLS (PCBs) FROM WHITE GOODS

Teresa Hay, Division Administrator, Waste Management Authority Division, presented the following item.

The Commission is requested to approve the proposed rules on the removal and disposal of Polychlorinated Biphenyls (PCB) capacitors from white goods for filing as a Notice of Intended Action. The purpose of these rules is to implement 455B.304 and 455D.6(6) (House File 753). The proposed rules:

- require that facilities which remove PCB capacitors register with the Department by submitting a written description of the removal site.
- requires the Department to maintain the register of removal facilities and provide copies to the public upon request.
- requires that the removal site meet Federal OSHA standards for PCB handling in order to have the facility included on the registry.

- exempts facilities which remove less than 200 lbs of capacitors in one month but no more than 500 lbs per year.
- requires that all white goods are inspected and all capacitors removed before shredding, compacting, crushing, or similar processing.
- requires that all PCB capacitors be sent to an EPA approved waste disposal facility.

The proposed rules contain information on the storage of PCB capacitors.

(Proposed rule shown on the following 2 pages)

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Environmental Protection Commission Minutes
ENVIRONMENTAL PROTECTION COMMISSION [567]
Notice of Intended Action

Pursuant to the authority of Iowa Code section 455B.304 and 455D.6(6) (1989 Iowa Acts, House File 753), the Environmental Protection Commission of the Department of Natural Resources intends to adopt new Chapter 118, "Removal and Disposal of Polychlorinated Biphenyls from White Goods Prior to Processing," Iowa Administrative Code.

These rules pertain to the environmentally safe removal and disposal of electrical parts of white goods which contain polychlorinated biphenyls prior to any processing or metals recovery.

Any interested person may file written comments or suggestions on the proposed rules through March 16, 1990. Such written materials should be directed to Susan Miller, Iowa Department of Natural Resources, Wallace State Office Building, 900 East Grand, Des Moines, Iowa 50319-0034. Comments may be made by telephone by calling 515/281-5814. Persons are also invited to present oral or written comments at public hearings which will be held on March 14, 1990 at 1:00 p.m. in the fifth floor west conference room at the Department of Natural Resources, Wallace State Office Building, 900 East Grand, Des Moines, Iowa; on March 15, 1990 at 1:00 p.m. at the Iowa Geological Survey, Trowbridge Hall, 123 North Capitol, Iowa City, Iowa; and on March 16, 1990 at 7:00 p.m. at the Council Bluffs Community Hall, 205 South Main, Council Bluffs, Iowa.

Copies of the proposed rules may be obtained from the Records Section, Iowa Department of Natural Resources, Wallace State Office Building, 900 East Grand Avenue, Des Moines, Iowa 50319-0034.

In accordance with Iowa Code section 17A.31, notice is hereby given that these rules may have an impact on small businesses.

These rules are intended to implement Iowa Code section 455B.304 and 455D.6, 1989 Iowa Acts, House File 753.

ITEM 1. Adopt new Chapter 118.

Proposed Rules on Removal and Disposal of Polychlorinated
Biphenyls (PCBs) from White Goods Prior to Processing

567--118.1(455B and 455D) Purpose. The purpose of this rule is to implement Iowa Code section 455B.304 and 455D.6(6) by providing regulations for the proper removal and disposal of electrical parts containing polychlorinated biphenyls from white goods prior to processing.

567--118.2(455B and 455D) Definitions.

"Capacitor" means a device for accumulating and holding a charge of electricity and consisting of conducting surfaces separated by a dielectric.

"Facility" refers to any permitted sanitary disposal project, salvage dealer, shredder operation or other party which may accept white goods for disposal or processing.

"Fluff" is the residual waste from the shredding operation after metals recovery.

"PCB" and "PCBs" mean any chemical substance that is limited to the biphenyl molecule that has been chlorinated to varying degrees or any combination of substances which contains such substance.

"Processing" means crushing, compacting, smashing, shredding, or other similar action.

"White goods" means appliances including, but not limited to, refrigerators, freezers, air conditioners, central heating/air conditioning units, washers, dryers, microwave ovens and fluorescent light fixtures.

567--118.3(455B and 455D) Removal and disposal requirements.

118.3(1) Registration of capacitor removal and storage facility.

a. Any facility that is now or plans to be engaged in the removal of PCB capacitors from white goods must register by submitting a written description of the removal and storage site to the Department of Natural Resources which will maintain that list and provide copies to interested parties upon request.

b. The removal and storage site must comply with federal OSHA standards for PCB handling in order for the facility to be included on the registration list.

c. Exemptions. Any person or facility that removes less than 200 pounds of capacitors in one month, but no more than 500 pounds in one year, is exempt from the registration requirement but is not exempt from the remaining regulations on removal and disposal of capacitors, handling of spills or shredding of white goods.

d. Permitted sanitary disposal projects must comply with permit conditions pertaining to activities governed by this chapter.

118.3(2) Removal of capacitors.

a. All white goods must be inspected for the presence of capacitors.

b. All capacitors are assumed to contain PCBs unless proven otherwise by an approved laboratory or unless the words "No PCBs" has been imprinted on the body of the capacitor by the manufacturer.

c. All capacitors must be removed from all white goods prior to processing and disposed of in accordance with subrule 118.3(3) with the exception of any capacitor which is proven not to contain PCBs that may be disposed of as any other non-hazardous solid waste.

118.3(3) Disposal of capacitors.

a. All capacitors must be placed in 55-gallon containers which show no signs of damage. All interstitial space must be filled with absorbent material (soil, sand, oil-dry, kitty litter, etc.).

b. All containers must be labeled with the proper EPA-approved PCB label.

c. All containers must be sealed prior to shipment.

d. Small capacitors (<3 lbs.) may be stored for up to one year on site in 55-gallon containers provided that: the containers show no signs of rust, cracking or dents; the containers are properly labeled with EPA PCB label; the storage area is separated and delineated from any other non-hazardous storage area; and the capacitors show no sign of cracks or leaks (cracks or leaks are treated as spills).

e. All capacitors must be transported to and disposed of at a waste disposal facility approved by the EPA for PCBs.

f. Sealed containers of capacitors may be transported by the owner or by a licensed hazardous waste transporter.

118.3(4) Spills. Any spills from leading or cracked capacitors must be handled by placing the capacitor and any contaminated rags, clothing, and/or soil into a container for immediate shipment to an EPA-approved waste disposal facility. In the event of a spill, the facility which handles, stores or transports the PCB-contaminated materials must notify the Department of Natural Resources (515/281-8694), the local police department or the office of the affected county of occurrence of a hazardous condition as soon as possible, but no later than six hours after the onset or discovery of a spill.

118.3(5) Shredding of white goods. Fluff from the shredding of white goods must be sampled quarterly for the presence of PCBs. If the fluff contains <50ppm PCB, it may be landfilled at a permitted landfill under a Special Waste Authorization (SWA) from the Department of Natural Resources. If the fluff contains levels of contamination 50ppm or higher, it must be treated in a manner in accordance with 40 CFR 761.125 on disposal of free-flowing PCBs.

Date _____

Larry J. Wilson, Director

Allan Stokes presented background information on the handling of shredder fluff from white goods which contained PCBs.

Ms. Hay stated that House File 753 required the department to have rules for alternative strategies for handling white goods to the Commission by January 1990.

This was an informational item; no action was required.

FINANCIAL STATUS REPORT

Stan Kuhn, Division Administrator, Administrative Services Division, presented the following item.

The Year To Date Financial Status Report for the period ending October 31, 1989, by division, was provided to both commissions last month.

A similar report for the period ending November 30, 1989 will probably be available by December 8, 1989 and will be mailed to Environmental Protection Commissioners separately.

Staff will attempt to respond to questions that commissioners might have regarding this report, either individually, or at the December meeting.

(Financial report shown on the following 3 pages)

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IOWA DEPARTMENT OF NATURAL RESOURCES
SUMMARY OF EXPENDITURES VS. YEAR-TO-DATE PLAN
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	TOTAL EXPENDITURES 11/01/89 - 11/30/89	TOTAL EXPENDITURES FY-TO-DATE	YEAR-TO-DATE PLAN	OVER/UNDER YEAR-TO-DATE PLAN	CURRENT ANNUAL BUDGET
1000 DIRECTOR'S OFFICE					
101 PERSONAL SERVICES	15,537.44	89,242.97	93,641.00	4,398.03-	223,101.00
202 PERSONAL TRAVEL	2,865.90	13,708.20	14,640.00	931.80-	40,000.00
301 OFFICE SUPPLIES	520.30	757.36	400.00	357.36	1,200.00
303 EQUIPMENT MAINTENANCE SUPP	97.50	194.00	400.00	206.00-	1,200.00
308 OTHER SUPPLIES	7.50	111.92	50.00	61.92	120.00
309 PRINTING & BINDING	3,286.45	4,092.10	4,040.00	52.10	14,120.00
405 PROF & SCIENTIFIC SERVICE	29.58	29.58	1,500.00	1,470.42-	6,000.00
406 OUTSIDE SERVICES	0.00	497.85	1,000.00	502.15-	3,200.00
410 DATA PROCESSING	607.06	607.06	1,200.00	592.94-	4,800.00
501 EQUIPMENT	0.00	2,274.75	2,400.00	125.25-	4,800.00
DIVISION TOTAL	22,951.73	111,515.79	119,271.00	7,755.21-	298,541.00

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	TOTAL EXPENDITURES 11/01/89 - 11/30/89	TOTAL EXPENDITURES FY-TO-DATE	YEAR-TO-DATE PLAN	OVER/UNDER YEAR-TO-DATE PLAN	CURRENT ANNUAL BUDGET
2000 COORDINATION AND INFORMATION					
101 PERSONAL SERVICES	107,027.53	634,168.66	622,947.00	11,221.66	1,481,952.00
202 PERSONAL TRAVEL	2,340.68	13,947.63	16,598.00	2,650.37-	45,800.00
203 STATE VEHICLE OPERATION	0.00	2,581.07	3,643.00	1,061.93-	10,931.00
204 STATE VEHICLE DEPRECIATIO	0.00	4,535.00	5,900.00	1,365.00-	17,700.00
301 OFFICE SUPPLIES	428.70	42,159.84	23,500.00	18,659.84	70,500.00
302 FACILITY MAINTENANCE SUPP	685.21	6,026.41	6,000.00	26.41	16,000.00
303 EQUIPMENT MAINTENANCE SUP	429.04	4,550.59	4,000.00	550.59	12,000.00
307 AG., CONSERVATION & HORT S	0.00	220.00	250.00	30.00-	500.00
308 OTHER SUPPLIES	16,128.47	23,511.69	9,600.00	13,911.69	28,700.00
309 PRINTING & BINDING	11,424.53	102,979.61	140,424.00	37,444.39-	373,950.00
312 UNIFORMS & RELATED ITEMS	196.40	1,165.27	1,582.00	416.73-	2,250.00
401 COMMUNICATIONS	1,296.46	4,143.03	3,064.00	1,079.03	9,200.00
402 RENTALS	20.14	20.14	0.00	20.14	500.00
403 UTILITIES	97.75	8,360.83	8,910.00	549.17-	26,750.00
405 PROF & SCIENTIFIC SERVICE	7,477.50	26,075.00	56,120.00	30,045.00-	86,920.00
406 OUTSIDE SERVICES	5,414.14	10,813.53	10,000.00	813.53	60,000.00
408 ADVERTISING & PUBLICITY	1,200.58	3,751.46	0.00	3,751.46	12,500.00
410 DATA PROCESSING	2,307.08	2,307.08	5,686.00	3,378.92-	19,600.00
414 REIMBURSEMENTS TO OTHER A	241.15	365.99	5,000.00	4,634.01-	5,000.00
501 EQUIPMENT	11,072.80	19,906.11	61,450.00	41,543.89-	63,750.00
DIVISION TOTAL	167,788.16	911,588.94	984,674.00	73,085.06-	2,344,503.00

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	TOTAL EXPENDITURES 11/01/89 - 11/30/89	TOTAL EXPENDITURES FY-TO-DATE	YEAR-TO-DATE PLAN	OVER/UNDER YEAR-TO-DATE PLAN	CURRENT ANNUAL BUDGET
3000 ADMINISTRATIVE SERVICES DIV.					
101 PERSONAL SERVICES	280,419.85	1,560,382.02	1,703,534.00	143,151.98-	4,041,357.00
202 PERSONAL TRAVEL	4,354.70	17,127.18	22,041.00	4,913.82-	61,400.00
203 STATE VEHICLE OPERATION	14.01	15,210.81	22,365.00	7,154.19-	58,500.00
204 STATE VEHICLE DEPRECIATIO	0.00	21,595.00	26,275.00	4,680.00-	68,500.00
301 OFFICE SUPPLIES	42,574.12	135,335.98	91,260.00	44,075.98	340,040.00
302 FACILITY MAINTENANCE SUPP	0.00	108.94	800.00	691.06-	1,700.00
303 EQUIPMENT MAINTENANCE SUP	8,771.67	25,347.51	27,225.00	1,877.49-	61,890.00
308 OTHER SUPPLIES	794.29	3,673.62	3,933.00	259.38-	12,900.00
309 PRINTING & BINDING	3,403.20	5,934.45	11,150.00	5,215.55-	27,075.00
312 UNIFORMS & RELATED ITEMS	320.34	804.43	1,000.00	195.57-	4,200.00
401 COMMUNICATIONS	16,281.74	53,427.45	74,421.00	20,993.55-	221,900.00
402 RENTALS	0.00	109.50	125.00	15.50-	500.00
406 OUTSIDE SERVICES	1,330.13	6,553.91	15,531.00	8,977.09-	35,450.00
410 DATA PROCESSING	44,990.47-	47,656.63	40,966.00	6,690.63	119,500.00
414 REIMBURSEMENTS TO OTHER A	1,837.28	1,927.68	4,170.00	2,242.32-	11,650.00
501 EQUIPMENT	3,354.38	39,380.22	60,421.00	21,040.78-	139,350.00
701 LICENSES	0.00	2.50	50.00	47.50-	150.00
DIVISION TOTAL	318,465.24	1,934,577.83	2,105,267.00	170,689.17-	5,206,062.00

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	TOTAL EXPENDITURES 11/01/89 - 11/30/89	TOTAL EXPENDITURES FY-TO-DATE	YEAR-TO-DATE PLAN	OVER/UNDER YEAR-TO-DATE PLAN	CURRENT ANNUAL BUDGET
4000 PARKS, PRES. & RECREATION DIV.					
101 PERSONAL SERVICES	296,943.20	2,360,429.38	2,278,073.00	82,356.38	5,073,170.00
202 PERSONAL TRAVEL	5,069.70	18,784.50	44,676.00	25,891.50-	103,709.00
203 STATE VEHICLE OPERATION	47.14	70,575.57	79,365.00	8,789.43-	179,776.00
204 STATE VEHICLE DEPRECIATIO	0.00	73,205.00	113,973.00	40,768.00-	287,369.00
301 OFFICE SUPPLIES	4,217.43	15,038.64	14,614.00	414.64	45,075.00
302 FACILITY MAINTENANCE SUPP	44,546.35	249,038.71	307,892.00	58,853.29-	692,568.00
303 EQUIPMENT MAINTENANCE SUP	13,215.60	115,344.48	96,360.00	18,984.48	294,000.00
307 AG., CONSERVATION & HORT S	974.40	5,877.04	3,295.00	2,582.04	19,500.00
308 OTHER SUPPLIES	8,263.85	25,807.19	10,649.00	15,158.19	26,944.00
309 PRINTING & BINDING	1,873.85	1,978.15	35,480.00	33,501.85-	102,139.00
312 UNIFORMS & RELATED ITEMS	2,400.93	8,142.81	12,854.00	4,711.19-	48,264.00
401 COMMUNICATIONS	3,191.35	26,799.06	23,567.00	3,232.06	72,182.00
402 RENTALS	5,905.33	18,599.89	10,837.00	7,762.89	20,490.00
403 UTILITIES	15,452.56	133,714.21	101,655.00	32,059.21	293,276.00
405 PROF & SCIENTIFIC SERVICE	106.99-	2,500.00	11,000.00	8,500.00-	60,045.00
406 OUTSIDE SERVICES	12,084.94	78,750.23	75,166.00	3,584.23	164,832.00
410 DATA PROCESSING	749.58	749.58	2,200.00	1,450.42-	8,000.00
414 REIMBURSEMENTS TO OTHER A	65.00	1,632.91	200.00	1,432.91	1,050.00
501 EQUIPMENT	22,260.34	72,952.32	104,532.00	31,579.68-	197,730.00
DIVISION TOTAL	437,154.56	3,279,909.67	3,326,388.00	46,478.33-	7,690,119.00

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IOWA DEPARTMENT OF NATURAL RESOURCES
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	TOTAL EXPENDITURES 11/01/89 - 11/30/89	TOTAL EXPENDITURES FY-TO-DATE	YEAR-TO-DATE PLAN	OVER/UNDER YEAR-TO-DATE PLAN	CURRENT ANNUAL BUDGET
5000 FORESTRY DIVISION					
101 PERSONAL SERVICES	131,080.48	656,125.11	713,197.00	57,071.89-	1,715,917.00
202 PERSONAL TRAVEL	5,146.14	14,627.37	15,017.00	389.63-	39,275.00
203 STATE VEHICLE OPERATION	0.00	22,084.34	32,365.00	10,280.66-	75,000.00
204 STATE VEHICLE DEPRECIATIO	0.00	36,485.00	49,115.00	12,630.00-	118,900.00
301 OFFICE SUPPLIES	1,635.60	3,832.51	7,570.00	3,737.49-	16,920.00
302 FACILITY MAINTENANCE SUPP	294.32	6,837.73	14,616.00	7,778.27-	31,000.00
303 EQUIPMENT MAINTENANCE SUP	2,635.63	23,264.89	24,826.00	1,561.11-	58,660.00
307 AG., CONSERVATION & HORT S	36,439.69	43,316.15	81,950.00	38,633.85-	104,178.00
308 OTHER SUPPLIES	867.58	4,510.60	15,150.00	10,639.40-	15,900.00
309 PRINTING & BINDING	1,727.15	2,022.20	9,600.00	7,577.80-	17,931.00
312 UNIFORMS & RELATED ITEMS	2,983.15	5,926.12	11,758.00	5,831.88-	14,225.00
401 COMMUNICATIONS	1,477.97	7,644.93	16,695.00	9,050.07-	44,230.00
402 RENTALS	934.00	4,564.42	6,100.00	1,535.58-	17,200.00
403 UTILITIES	365.29	4,230.14	14,880.00	10,649.86-	37,000.00
406 OUTSIDE SERVICES	503.00	4,776.90	21,600.00	16,823.10-	42,800.00
408 ADVERTISING & PUBLICITY	46.20	108.45	500.00	391.55-	600.00
410 DATA PROCESSING	488.97	488.97	480.00	8.97	700.00
414 REIMBURSEMENTS TO OTHER A	381.50	556.50	250.00	306.50	600.00
501 EQUIPMENT	1,861.79	4,681.91	50,412.00	45,730.09-	68,379.00
DIVISION TOTAL	188,868.46	846,084.24	1,086,081.00	239,996.76-	2,419,415.00

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	TOTAL EXPENDITURES 11/01/89 - 11/30/89	TOTAL EXPENDITURES FY-TO-DATE	YEAR-TO-DATE PLAN	OVER/UNDER YEAR-TO-DATE PLAN	CURRENT ANNUAL BUDGET
6000 ENERGY & GEOLOGICAL RESOURCES					
101 PERSONAL SERVICES	149,322.89	856,682.34	901,441.00	44,758.66-	2,116,141.00
202 PERSONAL TRAVEL	6,098.87	27,988.46	34,534.00	6,545.54-	77,592.00
203 STATE VEHICLE OPERATION	0.00	7,102.97	12,344.00	5,241.03-	26,540.00
204 STATE VEHICLE DEPRECIATIO	0.00	8,195.00	9,769.00	1,574.00-	23,442.00
301 OFFICE SUPPLIES	1,605.60	9,967.19	6,097.00	3,870.19	13,050.00
302 FACILITY MAINTENANCE SUPP	557.06	655.91	2,300.00	1,644.09-	3,800.00
303 EQUIPMENT MAINTENANCE SUP	0.00	163.12	1,300.00	1,136.88-	3,200.00
304 PROF. & SCIENTIFIC SUPPL	186.84	1,817.41	6,200.00	4,382.59-	10,652.00
308 OTHER SUPPLIES	8,949.70	20,736.56	13,293.00	7,443.56	27,900.00
309 PRINTING & BINDING	1,064.50	4,254.07	8,183.00	3,928.93-	24,200.00
401 COMMUNICATIONS	2,983.63	4,716.26	7,734.00	3,017.74-	18,570.00
402 RENTALS	175.00	935.00	875.00	60.00	2,100.00
403 UTILITIES	1,828.94	3,082.42	7,883.00	4,800.58-	19,750.00
405 PROF & SCIENTIFIC SERVICE	106,096.79	167,685.69	373,851.00	206,165.31-	891,710.00
406 OUTSIDE SERVICES	1,046.99	2,784.68	3,075.00	290.32-	8,323.00
410 DATA PROCESSING	2,889.62	2,889.62	3,931.00	1,041.38-	9,856.00
414 REIMBURSEMENTS TO OTHER A	2,873.79	2,873.79	704.00	2,169.79-	2,105.00
501 EQUIPMENT	9,386.41	12,490.93	16,896.00	4,405.07-	18,121.00
DIVISION TOTAL	295,066.63	1,135,021.42	1,410,410.00	275,388.58-	3,297,052.00

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	TOTAL EXPENDITURES 11/01/89 - 11/30/89	TOTAL EXPENDITURES FY-TO-DATE	YEAR-TO-DATE PLAN	OVER/UNDER YEAR-TO-DATE PLAN	CURRENT ANNUAL BUDGET
7000 ENVIRONMENTAL PROTECTION DIV.					
101 PERSONAL SERVICES	396,763.98	2,215,146.04	2,315,526.00	100,379.96-	5,500,002.00
202 PERSONAL TRAVEL	11,542.74	33,382.27	74,534.00	41,151.73-	154,000.00
203 STATE VEHICLE OPERATION	0.00	12,111.97	15,940.00	3,828.03-	43,000.00
204 STATE VEHICLE DEPRECIATIO	0.00	19,010.00	26,083.00	7,073.00-	63,000.00
301 OFFICE SUPPLIES	3,301.83	11,253.72	15,860.00	4,606.28-	33,950.00
302 FACILITY MAINTENANCE SUPP	6.98	589.04	1,000.00	410.96-	2,500.00
303 EQUIPMENT MAINTENANCE SUP	23.58	561.67	1,500.00	938.33-	4,000.00
304 PROF. & SCIENTIFIC SUPPL	0.00	426.80	1,800.00	1,373.20-	5,000.00
308 OTHER SUPPLIES	1,592.78	6,831.04	9,585.00	2,753.96-	24,170.00
309 PRINTING & BINDING	1,789.55	4,605.70	13,883.00	9,277.30-	30,450.00
312 UNIFORMS & RELATED ITEMS	547.65	547.65	1,400.00	852.35-	2,000.00
401 COMMUNICATIONS	1,482.19	9,461.84	12,250.00	2,788.16-	35,650.00
402 RENTALS	3,686.54	20,309.70	15,065.00	5,244.70	45,065.00
403 UTILITIES	290.48	2,427.67	4,041.00	1,613.33-	14,145.00
405 PROF & SCIENTIFIC SERVICE	11,288.99	58,935.74	369,213.00	310,277.26-	914,635.00
406 OUTSIDE SERVICES	1,986.48	9,602.99	14,658.00	5,055.01-	32,650.00
408 ADVERTISING & PUBLICITY	113.15	3,582.34	2,400.00	1,182.34	3,100.00
410 DATA PROCESSING	29,184.88	30,213.43	53,575.00	23,361.57-	137,500.00
414 REIMBURSEMENTS TO OTHER A	740.00	830.00	1,950.00	1,120.00-	8,250.00
501 EQUIPMENT	75,196.93	103,666.90	254,072.00	150,405.10-	432,550.00
701 LICENSES	0.00	30.00	285.00	255.00-	285.00
DIVISION TOTAL	539,538.73	2,543,526.51	3,204,620.00	661,093.49-	7,485,902.00

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	TOTAL EXPENDITURES 11/01/89 - 11/30/89	TOTAL EXPENDITURES FY-TO-DATE	YEAR-TO-DATE PLAN	OVER/UNDER YEAR-TO-DATE PLAN	CURRENT ANNUAL BUDGET
8000 FISH AND WILDLIFE DIVISION					
101 PERSONAL SERVICES	742,689.53	4,363,977.14	4,288,482.00	75,495.14	10,130,934.00
202 PERSONAL TRAVEL	35,715.24	129,517.23	141,715.00	12,197.77-	368,865.00
203 STATE VEHICLE OPERATION	16.79	143,030.47	205,253.00	62,222.53-	504,255.00
204 STATE VEHICLE DEPRECIATIO	0.00	201,790.00	240,856.00	39,066.00-	590,706.00
301 OFFICE SUPPLIES	57,398.29	98,539.45	108,469.00	9,929.55-	204,411.00
302 FACILITY MAINTENANCE SUPP	31,140.41	156,424.10	216,405.00	59,980.90-	507,191.00
303 EQUIPMENT MAINTENANCE SUP	23,723.64	163,231.95	190,637.00	27,405.05-	391,174.00
307 AG. CONSERVATION & HORT S	22,766.85	84,838.41	101,506.00	16,667.59-	295,512.00
308 OTHER SUPPLIES	27,247.40	56,352.27	41,110.00	15,242.27	104,513.00
309 PRINTING & BINDING	8,656.50	57,260.10	62,689.00	5,428.90-	167,096.00
312 UNIFORMS & RELATED ITEMS	21,431.86	41,602.29	44,968.00	3,365.71-	128,800.00
401 COMMUNICATIONS	9,731.93	49,463.40	68,575.00	19,111.60-	183,694.00
402 RENTALS	1,848.69	11,367.88	19,110.00	7,742.12-	44,600.00
403 UTILITIES	12,973.25	56,968.40	73,429.00	16,460.60-	220,306.00
405 PROF & SCIENTIFIC SERVICE	27,698.85	66,375.08	125,197.00	58,821.92-	241,968.00
406 OUTSIDE SERVICES	23,778.48	86,981.97	66,700.00	20,281.97	143,116.00
408 ADVERTISING & PUBLICITY	319.34	11,330.56	3,675.00	7,655.56	5,300.00
410 DATA PROCESSING	29,597.35	29,597.35	20,457.00	9,140.35	42,500.00
414 REIMBURSEMENTS TO OTHER A	1,652.14	2,782.22	40,000.00	37,217.78-	96,000.00
501 EQUIPMENT	38,004.86	63,029.32	115,680.00	52,650.68-	290,961.00
602 OTHER EXPENSES & OBLIGATI	800.00	800.00	250.00	550.00	600.00
701 LICENSES	30.00	95.00	29.00	66.00	70.00
DIVISION TOTAL	1,117,221.40	5,875,354.59	6,175,192.00	299,837.41-	14,662,572.00

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	TOTAL EXPENDITURES 11/01/89 - 11/30/89	TOTAL EXPENDITURES FY-TO-DATE	YEAR-TO-DATE PLAN	OVER/UNDER YEAR-TO-DATE PLAN	CURRENT ANNUAL BUDGET
9000 WASTE MANAGEMENT AUTHORITY					
101 PERSONAL SERVICES	27,688.54	147,963.67	158,209.00	10,245.33-	374,082.00
202 PERSONAL TRAVEL	3,571.98	14,456.07	9,320.00	5,136.07	22,000.00
301 OFFICE SUPPLIES	128.74	4,353.58	2,635.00	1,718.58	6,325.00
308 OTHER SUPPLIES	160.35	844.61	2,832.00	1,987.39-	7,000.00
309 PRINTING & BINDING	1,336.30	3,186.15	10,924.00	7,737.85-	27,200.00
406 OUTSIDE SERVICES	48.15	2,946.93	2,493.00	453.93	6,000.00
410 DATA PROCESSING	695.35	695.35	2,493.00	1,797.65-	6,000.00
414 REIMBURSEMENTS TO OTHER A	54.69	54.69	50.00	4.69	100.00
DIVISION TOTAL	33,684.10	174,501.05	188,956.00	14,454.95-	448,707.00

Mr. Kuhn explained expenditure items and comparison with the spending plan.

Discussion followed regarding several items in the report.

Chairperson Mohr asked if a minus sign could be used to indicate items that are over budget rather than under budget.

Mr. Kuhn responded that he will check with the data processing staff to see if that change can be made.

This was an informational item; no action was required.

COMPUTER EQUIPMENT ACQUISITION FOR UNCONTROLLED HAZARDOUS WASTE SITES AND SOLID WASTE PROGRAM

Stan Kuhn, Division Administrator, Administrative Services Division, presented the following item.

The department requests approval to purchase computer hardware and software to be used in support of hazardous waste abandoned site remediation and solid waste permit administration, to facilitate the maintenance of records required under the Superfund program for cost recovery at remedial sites, and to aid in project and program management, Superfund site files management and technical information management.

The following equipment is to be purchased under the Superfund preremedial sites cooperative agreement which is 100% federally funded:

3 IBM PC Model PS/2 with color monitor, math co-processor and token ring networking	\$18,123
1 Hewlett-Packard laser printer	2,100
Software and 3270 program emulators	5,551
TOTAL	\$25,774

The following equipment is to be purchased under the Superfund core management cooperative agreement which is 95% federally funded:

2 IBM PC Model PS/2 with color monitor, math co-processor and token ring networking	\$18,040
Software and 3270 program emulators	4,216
TOTAL	\$22,256

The following equipment is to be purchased for solid waste program support utilizing groundwater oil overcharge funds:

2	IBM PC Model PS/2 with color monitor, math co-processor and 3270 connection	\$13,564
	Software and 3270 program emulators	3,564
	TOTAL	\$17,128

Motion was made by Margaret Prah1 to approve the purchase of computer equipment for the Uncontrolled Hazardous Waste Sites and Solid Waste Program as presented. Seconded by Nancylee Siebenmann. Motion carried unanimously.

MONTHLY REPORTS

Allan Stokes, Division Administrator, Environmental Protection Division, presented the following item.

The following monthly reports are enclosed with the agenda for the Commission's information.

1. Rulemaking Status Report
2. Variance Report
3. Hazardous Substance/Emergency Response Report
4. Enforcement Status Report
5. Contested Case Status Report

Members of the department will be present to expand upon these reports and answer questions.

(Monthly reports shown on the following 7 pages)

IOWA DEPARTMENT OF NATURAL RESOURCES
 ENVIRONMENTAL PROTECTION COMMISSION
 RULEMAKING STATUS REPORT
 December 1, 1989

PROPOSAL	NOTICE TO COMMISSION	NOTICE PUBLISHED	RULES REVIEW COMMITTEE	HEARING	SUMMARY OF COMMENTS & RECOMMENDATIONS TO COMMISSION	RULES ADOPTED	RULES PUBLISHED	RULE EFFECTIVE
1. Ch. 22 - Controlling Air Pollution	10/16/89	11/15/89	12/05/89	11/27/89 11/28/89 12/06/89	*1/16/90	*1/16/90	*2/90	*3/90
2. Ch. 25 and 30 - Toxic Air Emissions	*1/16/89	*2/90	*2/90	*3/90	*4/90	*4/90	*5/90	*6/90
3. Ch. 39 - Plugging Abandoned Wells	10/16/89	11/15/89	12/05/89	12/11/89 12/12/89 12/13/89	*1/16/90	*1/16/90	*2/90	*3/90
4. Ch. 41 - Public Water Supplies	8/21/89	9/20/89	10/10/89	10/10/89 10/11/89 10/12/89	*1/16/90	*1/16/90	*2/90	*3/90
5. Ch. 60-62 - Water Quality Standards	7/17/89	8/09/89	9/11/89	8/29/89 8/30/89 8/31/89 9/06/89	12/11/89	*12/11/89	*1/10/90	*2/14/90
6. Ch. 101.3 - Farm Waste Rules	10/16/89	11/15/89	12/05/89	12/05/89 12/06/89 12/07/89	*1/16/90	*1/16/90	*2/90	*3/90
7. Ch. 118 - Removal and Disposal of PCBs from White Goods Prior to Processing	*1/16/90	*2/90	*2/90	3/14/90 3/15/90 3/16/90	*4/90	*4/90	*5/90	*6/90
8. Ch. 119 - Waste Oil	*1/16/90	*2/90	*2/90	3/14/90 3/15/90 3/16/90	*4/90	*4/90	*5/90	*6/90

*Projected

MONTHLY VARIANCE REPORT						
Month: November, 1989						
No.	Facility	Program	Engineer	Subject	Decision	Date
1.	Ames Laboratory-ISU	Air Quality		Explosives	Approved	11/16/89
2.	Des Moines - ICA - Phase 10, Segment 6	Wastewater Construction	Veenstra & Kimm, Inc.	Land Application-Soil pH	Approved	11/01/89
3.	Maquoketa, City of	Solid Waste		Permit Exemptions	Approved	11/01/89

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TOPIC: Report of Hazardous Conditions

During the period November 1, 1989 through November 30, 1989, reports of 57 hazardous conditions were forwarded to the Central Office. Two incidents are highlighted below. A general summary and count by field office is attached. These do not include releases from underground storage tanks, which are reported separately.

Date Reported and County	Description: Material, Amount, Date of Incident, Cause, Location, Impact	Responsible Party	Response and Corrective Actions
11/02/89 TAYLOR	A stopcock on a storage tank broke and allowed 4,000 gallons of 28% nitrogen fertilizer to flow about 175 feet to a county road culvert and into a farm pond near Lenox, Iowa on November 2, 1989. A shallow well that serves a farm house was 30 feet from the pond.	Harry Freeman Lenox, Iowa 50851	The outlet to the farm pond was plugged. The user of the well was advised not to drink the water pending analysis of collected samples. Contaminated soil was excavated for application on farmland at normal rates.
11/16/89 POLK	A transport truck clipped a guard post and damaged a valve on one of its compartments at 2503 SE 43rd St. in Pleasant Hill, Iowa on November 16, 1989. About 1800 gallons of fuel oil and gasoline spilled on asphalt and soil.	Williams Pipeline 3636 Westown Parkway Suite 215 West Des Moines, Iowa 50265	Product was vacuumed off the asphalt and contaminated soil was excavated for proper disposal.

NUMBERS IN PARENTHESES REPRESENT REPORTS FOR THE SAME PERIOD IN FISCAL YEAR 1989Substance TypeMode

Month	Total # of Incidents	Petroleum Product	Agri. Chemical	Other Chemicals and Substances	Handling and Storage	Pipeline	Highway Incident	RR Incident	Fire	Other
OCT	89	62	10	17	52	3	10	1	1	22
NOV	57 (55)	36 (27)	4 (9)	17 (19)	39 (35)	1 (3)	10 (12)	2 (1)	0 (0)	5 (4)

Total # of Incidents Per
Field Office
This Period

01 02 03 04 05 06
10 5 2 5 24 11

REPORTS OF RELEASES FROM UNDERGROUND STORAGE TANKS

During the period of November 1, 1989 through November 30, 1989, the following number of releases from underground storage tanks were identified.

80 (42)

The number in parentheses represents the number of releases during the same period in Fiscal Year 1988.

Enforcement Report Update

The following new enforcement actions were taken last month:

Name, Location and Field Office Number	Program	Alleged Violation	Action	Date
American Coals Corporation, Marion County (5)	Solid Waste Air Quality	Other Violations Fugitive Dust	Order/Penalty	11/08/89
Darlo Schaap, Sioux Center (3)	Solid Waste	Open Dumping	Order/Penalty	11/08/89
Tri-Pac Junkyard, Ft. Dodge (2)	Air Quality	Construction Without Permit	Order	11/08/89
Clutier Water Supply (5)	Drinking Water	MCL - Bacteria	Order/Penalty	11/08/89
Iowa Public Service Co. George Neal Station, Sioux City (3)	Air Quality	Construction Without Permit	Order/Penalty	11/09/89
Henry Ketelsen, Charter Oak (4)	Underground Tank	Monitoring Deficiencies	Order	11/09/89
Tin Shed, Argyle (6)	Drinking Water	Monitoring/Reporting Bacteria	Amended Order	11/09/89
Mt. Hamil Tap, Donnellson (6)	Drinking Water	Monitoring/Reporting Bacteria	Amended Order	11/09/89
FAR-MOR Feeder Pigs, Henry County (6)	Wastewater	Prohibited Discharge	Order	11/16/89
Lakeshore Drive Inc., et.al. Osceola (5)	Flood Plain	Reconstruction	Referred to AG	11/20/89
Howard Gross, West Union (1)	Flood Plain	Construction Without Permit	Referred to AG	11/20/89
Arthur Pape, West Union (1)	Flood Plain	Construction Without Permit	Referred to AG	11/20/89
William J. Bown, Marshalltown (5)	Solid Waste	Open Dumping	Referred to AG	11/20/89
Fred Iben, Monticello (1)	Solid Waste	Open Dumping	Referred to AG	11/20/89
Wiltgen Construction Co. Calmar (1)	Solid Waste	Open Dumping	Referred to AG	11/20/89
Humboldt Co. Landfill Commission (2)	Solid Waste	Cover Violations	Referred to AG	11/20/89
Daryl Larson, D.V.M., Audubon (4)	Wastewater	Prohibited Discharge	Referred to AG	11/20/89
Trellex Morse, Inc., Keokuk (6)	Air Quality	Operational Violations	Order/Penalty	11/27/89
Alter Trading Corp., Inc., Davenport (6)	Solid Waste	Operation Without Permit	Order	11/27/89
Pony Creek Homeowners Assoc. #1, Pacific Junction (4)	Drinking Water	Monitoring/Reporting - Other Inorganics	Order/Penalty	11/27/89

Summary of Administrative Penalties

The following administrative penalties are due:

NAME/LOCATION	PROGRAM	AMOUNT	DUE DATE
Handi-Klas, Inc. (Webster City)	WW/HC	1,000	8-02-88
Soo Line Railroad Company (Mason City)	HC	1,000	8-07-89
Nozey & Mildred Habbab/John F. Constable (Ft. Dodge)	AQ	1,000	10-17-89
City of Des Moines	WW	1,000	11-02-89
Alta Vista Homeowners Assoc. (Ames)	WS	200	11-30-89
Des Moines Metro Solid Waste Agency	SW	1,000	12-15-89
Bill Mitchell Swine Service, Inc. (Madison Co.)	WW	100	12-22-89
Timber Lake Estates (Swisher)	WS	100	1-01-90
DeWitt Moose Lodge (DeWitt)	WS	200	1-06-90
American Coals Corp. (Marion County)	SW/AQ	1,000	1-10-90
Darlo Schaap (Sioux Center)	SW	600	1-14-90
Iowa Public Service (Sioux City)	AQ	600	1-15-90
Tin Shed (Argyle)	WS	1,000	1-21-90
Clutier Water Supply	WS	500	1-22-90
Trellex Morse, Inc. (Keokuk)	AQ	900	-----
Pony Creek Homeowners Assoc. #1 (Pacific Junction)	WS	200	-----

The following cases have been referred to the Attorney General:

NAME/LOCATION	PROGRAM	AMOUNT	DUE DATE
Shelter Shield (Buffalo Center)	AQ	1,000	12-03-86
OK Lounge (Marion)	WS	448	11-01-87
Richard Davis (Albia)	SW	1,000	2-28-88
McCabe's Supper Club (Burr Oak)	WS	335	12-14-88
Wee Willy's (Quasqueton)	WS	450	2-23-89
Eagle Wrecking Co. (Pottawattamie Co.)	SW	300	5-07-89
*Twelve Mile House (Bernard)	WS	119	5-20-89
*Lawrence Payne (Ottumwa)	SW	425	6-19-89
Stan Moser (Hudson)	SW	250	6-27-89
*Milo Chalfant, et. al. (Webster City)	SW	216	5-21-89
Gilbert John Fjone (Swaledale)	SW	400	7-04-89
Glenn C. Sevick (Mason City)	SW	400	7-17-89
Richard Kleindolph (Muscatine)	SW	500	8-17-89
Robert Fisch (Manchester)	AQ	600	9-01-89
Jeffrey Allen Miller (Shell Rock)	SW	1,000	9-09-89
William L. Bown (Marshalltown)	SW	1,000	10-01-89
Howard Gross (West Union)	FP	300	10-23-89

The following administrative penalties have been appealed:

NAME/LOCATION	PROGRAM	AMOUNT
AMOCO Oil Co. (Des Moines)	UT	1,000
Iowa City Regency MHP	WW	1,000
Thomas E. Lennon (Barnum)	FP	700
Great Rivers Coop (Atavia)	HC	1,000
1st Iowa State Bank (Albia)	SW	1,000
Cloyd Foland (Decatur)	FP	800
Land O' Lakes, Inc. (Ellsworth)	WW	1,000
City of Marcus	WS	1,000
Superior-Ideal, Inc. (Oskaloosa)	WW	1,000
IBP, inc. (Columbus Junction)	WW	600
Fred's 66 (Davenport)	HC	1,000
King's Terrace Mobile Home Court (Ames)	WW	1,000
King's Terrace Mobile Home Court (Ames)	WS	315
Premium Standard Farms, Inc. (Boone Co.)	WW/AQ	700
Amoco Oil Co. (West Des Moines)	UT	1,000
Paul Klorberdanz d/b/a The Mart (Danville)	UT	1,000
Circle Hill Farms, Ltd. (Ellsworth)	SW	600
Cozy Cafe (Lucas)	WS	500
Modern Manor Mobile Home Park (Iowa City)	WS	200
East Side Acres (Merville)	WS	600
Stone City Iron & Metal Co. (Anamosa)	AQ	1,000
Donald P. Ervin (Ft. Dodge)	SW	1,000
Monty Branstad (Leland)	AQ	400
Hickory Estates (Donahue)	WS	200
Craig Natvig (Cerro Gordo Co.)	SW	1,000
4 E's Farm, Inc. (Algona)	SW	600
Manson Water Supply	WS	500

*On Payment Schedule

The following administrative penalties were paid last month:

NAME/LOCATION	PROGRAM	AMOUNT
Kossuth Co. Care Facility (Algona)	WS	100
Central Water Supply (Okoboji)	WS	250
Mount Hamil Tap (Dønnellson)	WS	50
Kimballton Utilities	WS	100
Climax Molybdenum Co. (Ft. Madison)	WS	100
George A. Hormel & Co. (Davenport)	AQ	400
Arlis Bown (Warren Co.)	WW	1,000
Green Products Co. (Conrad)	AQ	500
Barnum Water Supply	WS	100
Arthur Pape (West Union)	FP	300
Westmore Road & Water Assoc. (Davenport)	WS	200
Mitchell Boars & Gilts (Madison Co.)	WW/FP	800
Norris Asphalt Paving, Inc. (Ottumwa)	AQ	1,000
	TOTAL	\$4,900

*On Payment Schedule

DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION COMMISSION
CONTESTED CASES
December, 1989

DATE RECEIVED	NAME OF CASE	ACTION APPEALED	PROGRAM	ASSIGNED TO	STATUS
1-23-86	Oelwein Soil Service	Administrative Order	WW	Landa	Hearing continued.
6-12-86	ADM - Clinton	Administrative Order	Air	Landa	Hearing continued.
12-03-86	City of Waukee	Administrative Order	WS	Hansen	Amended Admin. Order issued.
5-12-87	Iowa City Regency MHP	Administrative Order	WW	Hansen	Hearing held 11-03-87.
6-11-87	Thomas Lennon	Administrative Order	FP	Clark	Appealed to District Court.
8-10-87	Great Rivers Co-op	Administrative Order	HC	Landa	Final report approved. Settlement proposed.
1-15-88	First Iowa State Bank	Administrative Order	SW	Kennedy	Continued. Settlement pending.
1-22-88	IBP, Fort Dodge	NPDES Permit	WW	Hansen	Negotiating before filing.
2-04-88	Beaverdale Heights, Woodsman; Westwood Hills	Administrative Order	SW	Landa	Compliance actions initiated.
2-05-88	Warren County Brenton Bank	Administrative Order	UT	Landa	Phase II completed. Report due.
3-01-88	Cloyd Foland	Administrative Order	FP	Clark	Appealed to District Court.
4-13-88	Land O'Lakes, Inc.	Administrative Order	WW	Murphy	Negotiating before filing.
5-16-88	Marcus, City of	Administrative Order	WS	Landa	Compliance actions completed.
7-01-88	Superior Ideal, Inc.	Administrative Order	WW	Hansen	Hearing continued pending settlement discussions.
7-25-88	Nishna Sanitary Service, Inc.	Permit Conditions	SW	Landa	Compliance initiated.
8-03-88	Hardin County	Permit Conditions	SW	Landa	Compliance actions initiated.
10-03-88	IBP, Columbus Junction	Administrative Order	WW	Clark	Hearing continued.
10-20-88	Worth Co. Co-Op Oil Northwood Cooperative Elevator Sunray Refining and Marketing Co.	Administrative Order	HC	Landa	Hearing continued. Compliance initiated.
12-02-88	Edward Cain	Permit Denial	FP	Clark	Proposed decision 10/20/89.
12-02-88	Davis Co. Board of Supervisors	Administrative Order	AQ	Landa	Hearing continued.

Environmental Protection Commission Minutes

December 1989

 DEPARTMENT OF NATURAL RESOURCES
 ENVIRONMENTAL PROTECTION COMMISSION
 CONTESTED CASES
 December, 1989

DATE	NAME OF CASE	ACTION APPEALED	PROGRAM	ASSIGNED TO	STATUS
1-25-89	Amoco Oil Co.	Administrative Order	UT	Landa	Settlement proposed. Clean up progressing.
1-30-89	City of New Market	Permit Revision	WS	Hansen	Proposed compliance schedule submitted.
2-10-89	Northwestern States Portland Cement Company	Site Registry	HW	Landa	Hearing continued.
2-10-89	Baier/Mansheim/Hoyer	Site Registry	HW	Landa	Hearing continued.
2-13-89	King's Terrace Mobile Home Court	Administrative Order	WW	Murphy	Negotiating before filing.
2-13-89	King's Terrace Mobile Home Court	Administrative Order	WS	Murphy	Negotiating before filing.
2-16-89	John Deere Co.	Site Registry	HW	Landa	Hearing continued/settlement proposed.
2-16-89	Premium Standard Farms	Administrative Order	WW/AQ	Murphy	Hearing continued.
3-14-89	Dannie R. Hoover and Bill Edwards	Flood Plain Permit Issuance	FP	Clark	Hearing set for 12-21-89.
4-18-89	Star Coal Company	SWA Denial	SW	Landa	Hearing continued.
4-20-89	Des Moines Metro SLF	Administrative Order	SW	Kennedy	Settled.
5-01-89	Amoco Oil Company	Administrative Order	UT	Landa	Negotiating before filing.
6-07-89	Paul Kloberdanz, d/b/a The Mart	Administrative Order	UT	Landa	Decision rendered/Appealed.
6-08-89	Shaver Road Investments	Site Registry	HW	Landa	Hearing continued/Discovery initiated.
6-08-89	Hawkeye Rubber Mfg. Co.	Site Registry	HW	Landa	Hearing continued/Discovery initiated.
6-08-89	Lehigh Portland Cement Co.	Site Registry	HW	Landa	Hearing continued/Discovery initiated.
6-08-89	Jay Winders	Permit Denial	FP	Clark	Negotiating before filing.
6-19-89	Grand Mound, City of	Administrative Order	WW	Hansen	Hearing continued. Revised Plan of Action submitted
6-22-89	Chicago & Northwestern Transportation Co. Hawkeye Land Co. Blue Chip Enterprises	Administrative Order	HC	Landa	Hearing continued pending settlement negotiations.
7-11-89	Circle Hill Farms, Ltd.	Administrative Order	SW	Kennedy	Settlement pending.
7-19-89	Lehigh Portland Cement Co.	Administrative Order	HC	Landa	Sent to DIA.
7-26-89	Cozy Cafe	Administrative Order	WS	Hansen	Negotiating before filing.
8-31-89	Howard McKee	Clean-up Costs	HC	Murphy	Hearing held 11-15-89.
9-01-89	Charles Clapp	Administrative Order	UT	Landa	Decision rendered.
9-01-89	Stone City Iron & Metal	Administrative Order Permit Denial	AQ	Kennedy	Negotiating before filing.
9-13-89	Carroll, City of	Administrative Order	WW	Murphy	Negotiating before filing.
9-22-89	Modern Manor Mobile Home Park	Administrative Order	WS	Kennedy	Hearing held 11-15-89.
9-26-89	East Side Acres	Administrative Order	WS	Hansen	Hearing held 11-21-89.
10-04-89	Donald P. Ervin	Administrative Order	SW	Kennedy	Hearing held 11-02-89.
10-12-89	Electro-Coatings, Inc.	Administrative Order	HC	Landa	Sent to DIA.
10-16-89	Monty Branstad	Administrative Order	AQ	Kennedy	Negotiating before filing.
10-24-89	Farmers Cooperative Elevator Association of Sheldon	Site Registry	HC	Landa	Sent to DIA.
10-24-89	Consumers Cooperative Association	Site Registry	HC	Landa	Sent to DIA.
10-26-89	Craig Natvig	Administrative Order Flood Plain	SW	Kennedy	Sent to DIA. Hearing set for 12-18-89.
10-26-89	Roger Thome	Water Use Permit	WR	Clark	Hearing set for 1-3-90.
10-30-89	Northwestern States Portland Cement Co.	Administrative Order	HC	Landa	Negotiating before filing.
10-30-89	Burlington Northern Railroad Co.	Site Registry	HC	Landa	Sent to DIA.
10-31-89	Peabody International Corp.	Administrative Order	HC	Landa	Sent to DIA.
11-01-89	Sam Levine/Morris Levine	Site Registry	HC	Landa	Negotiating before filing.
11-03-89	Bill Mitchell Swine Service, Inc.	Administrative Order	WW	Murphy	Settled.
11-03-89	Bridgestone/Firestone, Inc.	Site Registry	HC	Landa	Sent to DIA.
11-15-89	4 E's Farms, Inc. and Alphons Erpelding	Administrative Order	SW	Hansen	Negotiating before filing.
11-17-89	Aten Services, Inc.	Administrative Order	SW/UT	Landa	Negotiating before filing.
11-27-89	Manson, City of	Administrative Order	WS	Hansen	Negotiating before filing.

IOWA DEPARTMENT OF NATURAL RESOURCES
Legal Services Bureau

DATE: November 30, 1989
TO: Environmental Protection Commission
FROM: Michael P. Murphy
SUBJECT: Attorney General Referrals

The Commission requested a statistical summary regarding resolution of matters referred to the Attorney General. We have reviewed monthly reports of cases referred since January, 1985. I have categorized the types of resolution as follows:

"D" (Dismissed) - case resolved against the interest of the department.

"I" (Informal Resolution) - case resolved in favor of the department without resort to legal action. Generally this would apply where the referred party complied with everything we sought, shortly after referral, for example if we referred to collect a penalty and the penalty is then paid without the necessity of an action being filed.

"CD1" (Consent Decree 1) - consent decree negotiated and entered with the court, without a lawsuit being filed first. The Attorney General normally contacts a referred party before filing a lawsuit, and if the party responds with an indication that settlement is possible, this course of action is normally utilized.

"CD2" (Consent Decree 2) - consent decree is negotiated and entered after a lawsuit is filed. This normally occurs when a satisfactory response is not made to the Attorney General's first contact, but the party settles thereafter without much delay.

"CD3" (Consent Decree 3) - this is what I refer to as the courthouse settlement. After the Attorney General files a lawsuit, goes through pretrial procedures such as discovery, and sets the matter for trial, the party finally throws in the towel.

"T" (Trial) - case resolved in favor of the department after trial. I have not included default judgments in this category unless the department has actually obtained performance of the matters ordered, e.g. payment of a penalty, since a default judgment does not normally mean the case is resolved.

The statistical report follows. The numbers in parentheses behind the data refer to the average number of months taken to close the case. I will be available to discuss the report.

Year Referred	D	I	CD1	CD2	CD3	T	Total
1985	1(26)	---	3(7)	4(12)	3(26)	---	11
1986	---	4(1.5)	8(7.5)	2(6.5)	3(31)	---	17
1987	1(2)	6(2)	12(4.5)	9(9)	5(21)	---	33
1988	---	13(2)	14(4)	3(12)	2(11)	1(3)	33
1989	1(6)	5(1)	10(3)	1(7)	---	1(4)	17

Mr. Stokes distributed the following anticipated rulemaking schedule for the Environmental Protection Division for January through June 1990.

Note: Month listed is the month the item/proposal will be brought to the Commission as an "Information". Generally the Commission will be asked to approve a "Notice of Intended Action" the following month.

January 1990

- | | |
|--|---------------|
| - Toxic Air Emissions Regulations | - Air Quality |
| - Open Burning of trees | - Air Quality |
| - Underground Storage Tank Remediation & Cleanup Regulations | - Air Quality |

February 1990

- | | |
|--|----------------|
| - Solid Waste Financial Assurance & Reporting Regulations | - Solid Waste |
| - Solid Waste Operator Certification Regulations | - Solid Waste |
| - Yard Waste Disposal (composting) Regulations For
Central Municipal Facilities | - Solid Waste |
| - Surface Water Filtration & Disinfection Regulations | - Water Supply |
| - Coliform Bacteria Regulations Update | - Water Supply |

March 1990

- | | |
|---|-----------------|
| - Stream Classifications Based on Water Quality Standards | - Water Quality |
| - Effluent Monitoring & Toxicity Testing Regulations | - Wastewater |
| - Medical Waste Disposal Regulations | - Solid Waste |

April 1990

- | | |
|--|---------------|
| - New Source Performance Standards & National Emission
Standards for Hazardous Air Pollutants Regulations -
Update to Conform with Federal Rules | - Air Quality |
| - Laboratory Certification Regulations | - Air Quality |

May 1990

- | | |
|--|----------------|
| - Synthetic Organic Compounds & Pesticides Monitoring
Regulations | - Water Supply |
| - Landfill Gas Migrations Regulations | - Solid Waste |
| - Disposal/Beneficial Use of Foundry Sand Regulations | - Solid Waste |

June 1990

- | | |
|--|--------------|
| - National Pollutant Discharge Elimination System Program
Regulations - Update to Federal Standards | - Wastewater |
| - General Permits for Wastewater Regulations | - Wastewater |
| - Procedures for allowing CBOD Effluent Limitations for
Industrial Facilities | - Wastewater |

A lengthy discussion took place regarding underground storage tank cleanup requirements in relation to Chapter 133.

Mr. Stokes stated that problems with cleanup standards at the present time are that under Chapter 133, absent specific provisions in the Underground Storage Tank program, if contamination is detected at .7 ppb benzene or above, the party would be requested to do an assessment.

Clark Yeager asked what people can do who are receiving notices to make an assessment and they cannot afford it.

Nancylee Siebenmann suggested that the department refrain from sending anymore assessment letters until the Commission address the rules in January.

This was an informational item; no action was required.

FINAL RULE--CHAPTERS 60, 61, AND 62, WATER QUALITY STANDARDS

Allan Stokes, Division Administrator, Environmental Protection Division, presented the following item.

The Commission is requested to approve adoption and filing of the proposed revisions to the Water Quality Standards, Chapter 567-60, 61, and 62. Six public hearings were held as indicated in the Notice of Intended Action. Numerous oral comments and thirty-seven written comments were provide. A Responsiveness Summary has been prepared addressing all comments received. In addition, an Economic Assessment was prepared on the anticipated cost and benefit of the proposed rules. These items are included in the agenda package along with the final rule and rule referenced document.

(Rule is shown on the following 47 pages)

ENVIRONMENTAL PROTECTION COMMISSION [567]
Adopted and Filed

Pursuant to the authority of Iowa Code sections 455B.105 and 455B.173, the Environmental Protection Commission for the Department of Natural Resources amends Chapter 60, "Scope of Title-Definitions- Forms-Rules of Practice," Chapter 61, "Water Quality Standards," and Chapter 62, "Effluent and Pretreatment Standards: Other Effluent Limitations or Prohibitions," Iowa Administrative Code.

As required by the U.S. Environmental Protection Agency (EPA), water quality standards are periodically reviewed for technical accuracy, incorporation of current scientific data and consistency with EPA guidelines and requirements.

A Notice of Intended Action was published on August 9, 1989, as ARC 103A reflecting proposed changes to water quality standards from this review. Public hearings were held on August 29, 1989, August 30, 1989, August 31, 1989 and September 6, 1989.

The amendments were adopted on November 21, 1989. Modifications to the proposed rules as published under the notice have been made in the mixing zone restrictions, use of diffuser pipes, and the submittal of additional instream data. Numerous written and oral comments were received and addressed in a responsiveness summary available from the department. This summary and an economic impact statement are on file with the Administrative Rules Coordinator.

These rules are intended to implement Iowa Code chapter 455B, division III, part I. These rules become effective February 14, 1990, after filing with the Administrative Rules Coordinator and publication in the Iowa Administrative Bulletin.

ITEM 1. Amend rule 60.2 (455B) by revising the definition for "secondary contact" to read as follows:

"Secondary contact" means any recreational or other water use in which contact with the water is either incidental or accidental and in which the probability of ingesting appreciable quantities of water is minimal, such as fishing, commercial and recreational boating and any limited contact incidental to shoreline activity. This would include users who do not swim or float in the waterbody while on a boating activity.

Further amend rule 60.2 (455B) by adding the following new definitions in alphabetical order:

"Acute toxicity" means that level of pollutants which would rapidly induce a severe and unacceptable impact on organisms.

"Chronic toxicity" means that level of pollutants which would, over long durations or recurring exposure, cause a continuous, adverse or unacceptable response in organisms.

"Crossover point" means that location in a river or stream in which the flow shifts from being principally along one bank to the opposite bank. This crossover point usually occurs within two curves or an S-shaped curve of a water course.

"Seven-day, ten-year low stream flow" means the lowest average stream flow which would statistically occur for seven consecutive days once every ten years.

"Intermittent watercourses" means watercourses which contain flow associated with rainfall/runoff events and which periodically go dry even in pooled areas.

"Losing streams" means streams which lose 30 percent or more of their flow during the seven-day, ten-year low stream flow periods to cracks and crevices of rock formations, sand and gravel deposits, or sinkholes in the streambed.

"Minimum flow" means that established stream flow in lieu of the seven-day, ten-year low stream flow to which the provisions of 567--Chapter 61 apply.

"Mixing zone" means a delineated portion of a stream or river in which wastewater discharges will be allowed to combine and disperse into the water body. The chronic criteria of subrule 61.3(3) will apply at the boundary of this zone.

"Water contact recreational canoeing" means the type of activities associated with canoeing outings in which primary contact with the water does occur. This would include users who swim or float in the water body while on a canoeing outing.

"Zone of initial dilution" means a delineated portion of a mixing zone in which wastewater discharges will be allowed to rapidly combine and begin dispersing into the water body. The acute criteria of subrule 61.3(3) will apply at the boundary of this zone.

ITEM 2. Amend subrule 61.2(1), third unnumbered paragraph, as follows:

Certain of the criteria are in narrative form without numeric limitations. In applying such narrative standards, decisions will be based on the U.S. Environmental Protection Agency's methodology described in "Guidelines for Deriving Numerical National Water Quality Criteria for the Protection of Aquatic Organisms and Their Uses," 1985 and on the rationale contained in "Quality Criteria for Water," published by the U.S. Environmental Protection Agency (1977), as updated by supplemental Section 304 (of the Act) Ambient Water Quality Criteria documents.

ITEM 3. Amend subrule 61.2(2), paragraph "b," by deleting the list of 49 water bodies entirely and by amending the first paragraph as follows:

b. Chemical integrity: ~~Those existing high-quality waters; named below; For those water bodies where water quality significantly exceeds levels necessary to protect existing uses and the waters designated as high quality in subrule 61.3(5)"e", that water quality will be maintained at or above existing quality, except when;---after---full---satisfaction---of---the intergovernmental-coordination-and-public-participation-provisions-of-the continuing-planned-process; it is determined by the Environmental Protection Commission after public hearing and after intergovernmental coordination and public participation provisions noted in the continuing planning process that there is need to allow a lower the chemical quality because of necessary and justifiable economic and or social development in the area. In-allowing-such degradation-or-lowered-chemical-quality;-the~~ The state shall assure ensure adequate chemical quality to fully protect existing uses.

ITEM 4. Amend subrule 61.2(2), paragraph "c," as follows:

c. ~~It-is-intended-that-rules-defining-facility-design-criteria;-discharge limitations;-and-other-restrictions-will-be-adopted-by-the-commission-for specific-application-to-antidegradation-waters:-West-Lake-Okoboji-is-an outstanding-Iowa-lake;-and-standards~~ Standards and restrictions more stringent than those applied to other antidegradation waters may be applied by the commission to West Lake Okoboji those waters listed below when it is determined through-broadly-based-public-participation that such more stringent standards and restrictions are justified necessary to fully maintain water quality at existing levels.

West Lake Okoboji in Dickinson County.

ITEM 5. Amend subrule 61.2(2), paragraph "d," as follows:

d. The Mississippi River and the Missouri River do not meet existing-high quality-waters the criteria of 61.2(2)"c" but nevertheless constitute waters of exceptional state and national significance. Water quality management decisions regulatory-actions-affecting-them will be made in consideration of directed-toward-water-quality-improvement-commensurate-with the exceptional value of the resource.

ITEM 6. Amend subrule 61.2(2), paragraph "f," introductory paragraph, as follows and delete the list of 43 water bodies:

f. Physical and biological integrity: The waters designated as high-quality resource waters in subrule 61.3(5)"e" will receive protection of existing uses through maintaining water quality levels necessary to fully protect existing uses or improve water quality to levels necessary to meet the designated use criterion in Table 1, 2 and 3 and at preserving or enhancing the physical and biological integrity of these waters. Water--quality management-regulatory-actions-affecting-high-quality-resource-waters-listed below-will-be-directed-at-water-quality-improvement-commensurate-with-the exceptional-value-of-the-resource-and-at-preserving-and-enhancing-the-physical and-biological-integrity-of-these-waters: This involves the protection of such features of the water body as channel alignment, bed characteristics, water velocity, aquatic habitat, and the type, distribution and abundance of existing aquatic species.

ITEM 7. Rescind subrule 61.2(4) and insert the following in lieu thereof:

61.2(4) Regulatory mixing zones. Mixing zones are recognized as being necessary for the initial assimilation of point source discharges which have received the required degree of treatment or control. Mixing zones shall not be used for, or considered as, a substitute for minimum treatment technology required by subrule 61.2(3). The objective of establishing mixing zones is to provide a means of control over the placement and emission of point source discharges so as to minimize environmental impacts. Waters within a mixing zone shall meet the general water quality criteria of subrule 61.3(2). Waters at and beyond mixing zone boundaries shall meet all applicable standards and the chronic criteria of subrule 61.3(3) Table 1 and 3 for that particular water body or segment. A zone of initial dilution may be established within the mixing zone beyond which the applicable standards and the acute criteria of subrule 61.3(3) will be met. For waters designated under subrule 61.3(5), any parameter not included in Table 1, 2 and 3 of subrule 61.3(3), the chronic and acute criterion calculated following subrule 61.2(1), will be met at the mixing zone and zone of initial dilution boundaries respectively.

a. Due to extreme variations in wastewater and receiving water characteristics, spatial dimensions of mixing zones shall be defined on a site-specific basis. These rules are not intended to define each individual mixing zone, but will set maximum limits which will satisfy most biological, chemical, physical and radiological considerations in defining a particular mixing zone. Additional details are noted in the "Supporting Document for Iowa Water Quality Management Plans," Chapter IV for considering unusual site specific features such as side channels and sand bars which may influence a mixing zone. Applications for operation permits under subrule 64.3(1) may be required to provide specific information related to the mixing zone characteristics below their outfall so that mixing zone boundaries can be determined.

b. The dimensions of the mixing zone and the zone of initial dilution will be calculated using a mathematical model presented in the "Supporting Document for Iowa Water Quality Management Plans," Chapter IV or from instream studies

of the mixing characteristics during low flow. In addition, the most restrictive of the following factors will be met:

(1) The stream flow in the mixing zone may not exceed the most restrictive of the following:

1. Twenty-five percent of the seven-day, ten-year low stream flow for interior streams and rivers, and the Big Sioux and Des Moines Rivers.

2. Ten percent of the seven-day, ten-year low stream flow for the Mississippi and Missouri Rivers.

3. The stream flow contained in the mixing zone at the most restrictive of the applicable mixing zone length criteria, noted below.

(2) The length of the mixing zone below the point of discharge shall be set by the most restrictive of the following:

1. The distance to the juncture of two perennial streams.

2. The distance to a public water supply intake.

3. The distance to the upstream limits of an established recreational area, such as public beaches, and state, county and local parks.

4. The distance to the middle of a crossover point in a stream where the main current flows from one bank across to the opposite bank.

5. The distance to another mixing zone.

6. Not to exceed a distance of 2000 feet.

7. The location where the mixing zone contained the percentages of stream flow noted in subrule 61.2(4)"b"(1) above.

(3) The width of the mixing zone is calculated as the portion of the stream containing the allowed mixing zone stream flow. The mixing zone width will be measured perpendicular to the basic direction of stream flow at the downstream boundary of the mixing zone. This measurement will only consider the distance of continuous water surface.

(4) The width and length of the zone of initial dilution may not exceed 10 percent of the width and length of the mixing zone.

c. The stream flow used in determining wasteload allocations to assure compliance with the chronic criteria of Table 1 and 3 will be that value contained at the boundary of the allowed mixing zone. This stream flow may not exceed the following percentages of the seven-day, ten-year low stream flow as measured at the point of discharge:

(1) Twenty-five percent for interior streams and rivers, and the Big Sioux and Des Moines Rivers.

(2) Ten percent for the Mississippi and Missouri Rivers.

The stream flow used in determining effluent limits to assure compliance with the acute criteria of Table 1 and 3 may not exceed 10 percent of the calculated flow associated with the mixing zone.

d. The following exceptions apply to the mixing zone requirements:

(1) No mixing zone or zone of initial dilution will be allowed for waters designated as lakes or wetlands.

(2) No zone of initial dilution will be allowed in waters designated as cold water.

(3) The use of a diffuser device to promote rapid mixing of an effluent in a receiving stream will be considered on a case by case basis with its usage as a means for dischargers to comply with an acute numerical criterion.

(4) A discharger to the Mississippi or Missouri Rivers may provide to the department, for consideration, instream data which technically supports the allowance of an increased percentage of the stream flow contained in the mixing zone due to rapid and complete mixing. Any allowed increase in mixing zone flow would still be governed by the mixing zone length restrictions and the flow restrictions for interior streams.

e. Temperature changes within mixing zones established for heat dissipation will not exceed the temperature criteria in subrule 61.3(3)"b"(5).

f. The appropriateness of establishing a mixing zone where a substance discharged is bioaccumulative, persistent, carcinogenic, mutagenic, or teratogenic will be carefully evaluated. In such cases, effects such as potential groundwater contamination, sediment deposition, fish attraction, bioaccumulation in aquatic life, bioconcentration in the food chain, and known or predicted safe exposure levels shall be considered.

ITEM 8. Amend subrule 61.2(5), introductory paragraph, as follows:

61.2(5) Implementation strategy. Numerical criteria specified in theseThese water quality standards shall be met at all times when the flow of the receiving stream equals or exceeds the average seven-day seven-day, ten-year low flow which occurs once in ten years. Exceptions may be made for intermittent or low flow streams:--Where intermittent or low flow streams are classified as for Glass-B aquatic life protection significant resource warm waters or limited resource warm waters. For these waters, the department may waive the seven-day, ten-year low flow requirement and establish a minimum flow in lieu thereof. Such waiver shall be granted only when it has been determined that the aquatic resources of the receiving waters are of no significance at flows less than the established minimum, and that the continued maintenance of the beneficial uses of the receiving waters will be assured. In no event will toxic conditions be allowed to occur in the receiving waters outside of mixing zones established pursuant to subrule 61.2(4). The policy for granting waivers is described in the "Supporting Document for Iowa Water Quality Management Plans" (Iowa Department of Water, Air and Waste Management, Chapter IV, July 1976, as revised on October 16, 1984). (Copies are available upon request to the Department of Natural Resources, Henry A. Wallace Building, 900 East Grand, Des Moines, Iowa 50319-0034. Copy also on file with the Iowa Administrative Rules Coordinator.)

All minimum flows established under the provisions of this section will be published annually by the department.

ITEM 9. Amend subrule 61.2(5), paragraph "c," and add new paragraph "d" as follows:

c. Site-specific water quality standards criteria may be allowed in lieu of the water-quality-standards-referenced-in specific numerical criteria listed in Tables 1 and 3 of this chapter if adequate documentation is provided to show that site-specific the proposed criteria will protect all existing or potential uses of the surface water. Site-specific water quality standards criteria may be appropriate where:

(1) The types of organisms differ significantly from those used in setting the statewide standards criteria, or;

(2) The chemical characteristics of the surface water such as pH, temperature, and hardness differ significantly from the characteristics of the water used in setting the statewide standard criteria.

Development of site-specific criteria shall include an evaluation of the chemical and biological characteristics of the water resource and an evaluation of the impact of the discharge. All evaluations for site-specific criteria modification must be coordinated through the department, and be conducted using scientifically accepted procedures approved by the department. Any site-specific criterion developed under the provisions of this subrule is subject to the review and approval of the U.S. Environmental Protection Agency. All criteria approved under the provisions of this subrule will be published periodically by the department. and-performed-with-prior-consent

and -approval -of -the -department -using -scientifically -accepted -procedures. Guidelines for establishing site-specific water quality criteria can be found in "Water Quality Standards Handbook," published by the U.S. Environmental Protection Agency, December 1983.

d. A wastewater treatment facility may submit to the department technically valid instream data which provides additional information to be used in the calculations of their wasteload allocations and effluent limitations. This information would be in association with the low flow characteristics, width length and time of travel associated with the mixing zone or decay rates of various effluent parameters. The wasteload allocation will be calculated considering the applicable data and consistent with the provisions and restrictions in the rules.

ITEM 10. Renumber the existing subrule 61.3(1) as 61.3(2) and add the following language as subrule 61.3(1):

61.3(1) Surface water classification. All waters of the state are classified for protection of beneficial uses. These classified waters include general use segments and designated use segments.

a. General use segments. These are intermittent watercourses and those watercourses which typically flow only for short periods of time following precipitation in the immediate locality or as a result of discharges from wastewater treatment facilities, and whose channels are normally above the water table. These waters do not support a viable aquatic community of significance during low flow, and do not maintain pooled conditions during periods of no flow.

However, during periods when sufficient flow exists in the intermittent watercourses to support various uses, the general use segments are to be protected for livestock and wildlife watering, noncontact recreation, crop irrigation, and industrial, agricultural, domestic and other incidental water withdrawal uses. The aquatic life existing within these watercourses during elevated flows will be protected from acutely toxic conditions.

b. Designated use segments. These are water bodies which maintain flow throughout the year, or contain sufficient pooled areas during intermittent flow periods to maintain a viable aquatic community of significance.

Designated use waters are to be protected for all uses of general use segments in addition to the specific uses assigned. Designated use segments include:

(1) Primary contact recreation (Class "A"). Waters in which recreational or other uses may result in prolonged and direct contact with the water, involving considerable risk of ingesting water in quantities sufficient to pose a health hazard. Such activities would include, but not be limited to, swimming, diving, water skiing, and water contact recreational canoeing.

(2) Cold water aquatic life (Class "B(CW)"). Waters in which the temperature, flow, and other habitat characteristics are suitable for the maintenance of a wide variety of cold water species, including nonreproducing populations of trout and associated aquatic communities.

(3) High quality water (Class "HQ"). Waters with exceptionally better quality than the levels specified in Table 1, 2 and 3 and with exceptional recreational and ecological importance. Special protection is warranted to maintain the unusual, unique or outstanding physical, chemical, or biological characteristics which these waters possess.

(4) High quality resource water (Class "HQR"). Waters of substantial recreational or ecological significance which possess unusual, outstanding or unique physical, chemical, or biological characteristics which enhance the beneficial uses and warrant special protection.

(5) Significant resource warm water (Class "B(WW)"). Waters in which temperature, flow and other habitat characteristics are suitable for the maintenance of a wide variety of reproducing populations of warm water fish and associated aquatic communities, including sensitive species.

(6) Limited resource warm water (Class "B(LR)"). Waters in which flow or other physical characteristics limit the ability of the water body to maintain a balanced warm water community. Such waters support only populations composed of species able to survive and reproduce in a wide range of physical and chemical conditions, and are not generally harvested for human consumption.

(7) Lakes and wetlands (Class "B(LW)"). These are artificial and natural impoundments with hydraulic retention times and other physical and chemical characteristics suitable to maintain a balanced community normally associated with lake-like conditions.

(8) Drinking water supply (Class "C"). Waters which are used as a raw water source of potable water supply.

ITEM 11. Amend renumbered subrule 61.3(2), introductory paragraph, and paragraphs "d" and "h," as follows:

61.3(2) General water quality criteria. The following criteria are applicable to all surface waters including ~~those which have been designated as Class "A", "B", or "C"~~ general use and designated use waters, at all places and at all times to protect livestock and wildlife watering, aquatic life, noncontact recreation, crop irrigation, and industrial, domestic, agricultural and other incidental water withdrawal uses not protected by ~~Class A, B, or C~~ criteria in this rule the specific numerical criteria of subrule 61.3(3).

d. Such waters shall be free from substances attributable to wastewater discharges or agricultural practices in concentrations or combinations which are acutely ~~or harmful~~ toxic ~~or harmful~~ to human, animal, or plant life.

h. Water which enters a sinkhole or losing stream segment shall not exceed a fecal coliform content of 200 organisms/100ml, except when the waters are materially affected by surface runoff, but in no case shall fecal coliform levels downstream from a an existing discharge which may contain pathogens to humans be more than 200 organisms/100ml higher than the background level upstream from the discharge. No new wastewater discharges will be allowed on watercourses which directly or indirectly enter sinkholes or losing stream segments.

ITEM 12. Rescind subrules 61.3(2) to 61.3(4) and insert the following:

61.3(3) Specific water quality criteria.

a. Class "A" waters. Waters which are designated as Class "A" in subrule 61.3(5) are to be protected for primary contact recreation. The general criteria of subrule 61.3(2) and the following specific criteria apply to all Class "A" waters.

(1) From April 1 through October 31, the fecal coliform content shall not exceed 200 organisms/100 ml, except when the waters are materially affected by surface runoff; but in no case shall fecal coliform levels downstream from a discharge which may contain pathogens to humans be more than 200 organisms/100 ml higher than the background level upstream from the discharge.

(2) The pH shall not be less than 6.5 nor greater than 9.0. The maximum change permitted as a result of a waste discharge shall not exceed 0.5 pH units.

b. Class "B" waters. All waters which are designated as Class B(CW), B(WW), B(LR), or B(LW) are to be protected for wildlife, fish, aquatic and semiaquatic life, and secondary contact water uses. The following criteria shall apply to all Class "B" waters designated in subrule 61.3(5).

(1) Dissolved oxygen. Dissolved oxygen shall not be less than the values shown in Table 2 of this subrule.

(2) pH. The pH shall not be less than 6.5 nor greater than 9.0. The maximum change permitted as a result of a waste discharge shall not exceed 0.5 pH units.

(3) General chemical constituents. The specific numerical criteria shown in Tables 1, 2, and 3 of this subrule apply to all waters designated in subrule 61.3(5). The sole determinant of compliance with these criteria will be established by the department on a case-by-case basis. Effluent monitoring or in-stream monitoring, or both, will be the required approach to determine compliance.

1. The acute criteria represent the level of protection necessary to prevent acute toxicity to aquatic life. In-stream concentrations above the acute criteria will be allowed only within the boundaries of the zone of initial dilution.

2. The chronic criteria represent the level of protection necessary to prevent chronic toxicity to aquatic life. Excursions above the chronic criteria will be allowed only inside of mixing zones or only for short-term periods outside of mixing zones; however, these excursions cannot exceed the acute criteria shown in Tables 1 and 3. The chronic criteria will be met as short-term average conditions at all times the flow equals or exceeds either the seven-day, ten-year flow or any site specific low flow established under the provisions of subrule 61.2(5).

(4) The waters shall contain no substances in concentrations which will make fish or shellfish inedible due to undesirable tastes or cause a hazard to humans after consumption.

(5) Temperature.

1. No heat shall be added to interior streams or the Big Sioux River that would cause an increase of more than 3°C. The rate of temperature change shall not exceed 1°C per hour. In no case shall heat be added in excess of that amount that would raise the stream temperature above 32°C.

2. No heat shall be added to streams designated as cold water fisheries that would cause an increase of more than 2°C. The rate of temperature change shall not exceed 1°C per hour. In no case shall heat be added in excess of that amount that would raise the stream temperature above 20°C.

3. No heat shall be added to lakes and reservoirs that would cause an increase of more than 2°C. The rate of temperature change shall not exceed 1°C per hour. In no case shall heat be added in excess of that amount that would raise the temperature of the lake or reservoirs above 32°C.

4. No heat shall be added to the Missouri River that would cause an increase of more than 3°C. The rate of temperature change shall not exceed 1°C per hour. In no case shall heat be added that would raise the stream temperature above 32°C.

5. No heat shall be added to the Mississippi River that would cause an increase of more than 3°C. The rate of temperature change shall not exceed 1°C per hour. In addition, the water temperature at representative locations in the Mississippi River shall not exceed the maximum limits in the table below during more than 1 percent of the hours in the 12-month period ending with any month. Moreover, at no time shall the water temperature at such locations exceed the maximum limits in the table below by more than 2°C.

Zone II--Iowa-Minnesota state line to the northern Illinois border (Mile Point 1534.6)

Zone III--Northern Illinois border (Mile Point 1534.6) to Iowa-Missouri state line.

Month	Zone II	Zone III
January	4°C	7°C
February	4°C	7°C
March	12°C	14°C
April	18°C	20°C
May	24°C	26°C
June	29°C	29°C
July	29°C	30°C
August	29°C	30°C
September	28°C	29°C
October	23°C	24°C
November	14°C	18°C
December	9°C	11°C

c. Class "C" waters. Waters which are designated as Class "C" are to be protected as a raw water source of potable water supply. The following criteria shall apply to all Class "C" waters designated in subrule 61.3(5).

(1) Radioactive substances.

1. The combined radium-226 and radium-228 shall not exceed 5 picocuries per liter at the point of withdrawal.

2. Gross alpha particle activity (including radium-226 but excluding radon and uranium) shall not exceed 15 picocuries per liter at the point of withdrawal.

3. The average annual concentration at the point of withdrawal of beta particle and photon radioactivity from man-made radionuclides other than tritium and strontium-90 shall not produce an annual dose equivalent to the total body or any internal organ greater than 4 millirem/year.

4. The average annual concentration of tritium shall not exceed 20,000 picocuries per liter at the point of withdrawal; the average annual concentration of strontium-90 shall not exceed 8 picocuries per liter at the point of withdrawal.

(2) All substances toxic or detrimental to humans or detrimental to treatment process shall be limited to nontoxic or nondetrimental concentrations in the surface water.

(3) The pH shall not be less than 6.5 nor greater than 9.0.

TABLE 1: Criteria For Chemical Constituents

(all values as micrograms per liter unless noted otherwise).

Parameter		Use Designations				
		B(CH)	B(WW)	B(LR)	B(LW)	C
Arsenic (III)	Chronic	200	200	1000	200	--
	Acute	360	360	1800	360	50
Barium	Acute	--	--	--	--	1000
Benzene	Acute	--	--	--	--	5
Cadmium	Chronic	1	15	25	1	--
	Acute	4	75	100	4	10

Carbon Tetra- chloride	Acute	--	--	--	--	5
Chloride	Acute	--	--	--	--	250*
Chlordane	Chronic	.004	.004	.15	.004	--
	Acute	2.5	2.5	2.5	2.5	--
Chromium (VI)	Chronic	40	40	200	10	--
	Acute	60	60	300	15	50
Copper	Chronic	20	35	55	10	--
	Acute	30	60	90	20	1000
Cyanide	Chronic	5	10	10	10	--
	Acute	20	45	45	45	20
para-Dichloro- benzene	Acute	--	--	--	--	75
1,2-Dichloro- ethane	Acute	--	--	--	--	5
1,1-Dichloro- ethylene	Acute	--	--	--	--	7
Fluoride	Acute	--	--	--	--	2000
Lead	Chronic	3	30	80	3	--
	Acute	80	200	750	80	50
Mercury (II)	Chronic	.05	.05	.25	.05	--
	Acute	6.5	6.5	10	2.5	2
Nitrate as NO3	Acute	--	--	--	--	45*
Nickel	Chronic	350	650	750	150	--
	Acute	3250	5800	7000	1400	--
Polychlorinated Biphenyls (PCBs)	Chronic	.014	.014	1	.014	--
	Acute	2	2	2	2	--
Polynuclear Aromatic Hydro- Carbons (PAHs)**	Chronic	.03	.03	3	.03	--
	Acute	30	30	30	30	--
Phenols	Chronic	50	50	50	50	--
	Acute	1000	2500	2500	1000	50
Selenium (VI)	Chronic	10	125	125	70	--
	Acute	15	175	175	100	10
Silver	Chronic	2.5	8.5	8.5	.35	--
	Acute	30	100	100	4	50

Toluene	Chronic	50	50	150	50	--
	Acute	2500	2500	7500	2500	--
Total Residual Chlorine (TRC)	Chronic	10	20	25	10	--
	Acute	35	35	40	20	--
1,1,1-Trichloroethane	Chronic	--	--	--	--	200
	Acute	--	--	--	--	200
Trichloroethylene (TCE)	Chronic	80	80	80	80	--
	Acute	4000	4000	4000	4000	5
Vinyl Chloride	Chronic	--	--	--	--	2
	Acute	--	--	--	--	2
Zinc	Chronic	200	450	2000	100	--
	Acute	220	500	2200	110	1000

*expressed as milligrams/liter

**to include the sum of known and suspected carcinogenic PAHs

TABLE 2: Criteria For Dissolved Oxygen
(all values expressed in milligrams per liter as N)

	B(CW)	B(WW)	B(LR)	B(LW)
Minimum value for at least 16 hours of every 24-hour period	7.0	5.0	5.0	5.0**
Minimum value at any time during every 24-hour period	5.0	5.0	4.0	5.0**

*applies only to the upper layer of stratification in lakes

TABLE 3a: Criteria For Ammonia Nitrogen -- Cold Water Streams
(all values expressed in milligrams per liter as Nitrogen)

Temp. °C		pH											
		6.5	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0
1.0	Acute	28.5	22.9	19.7	16.0	12.4	9.2	6.5	4.1	2.6	1.7	1.0	.7
	Chronic	5.7	4.6	3.9	3.2	2.5	1.8	1.3	0.8	0.5	0.3	.2	.1
5.0	Acute	27.0	21.7	18.7	15.2	11.8	8.7	6.2	3.9	2.5	1.6	1.0	.7
	Chronic	5.4	4.3	3.7	3.0	2.4	1.7	1.2	0.8	0.5	.3	.2	.1
10.0	Acute	25.6	20.6	17.7	14.5	11.2	8.3	5.9	3.8	2.4	1.6	1.0	.7
	Chronic	5.1	4.1	3.5	2.9	2.2	1.7	1.2	0.8	0.5	.3	.2	.1
15.0	Acute	24.6	19.8	17.0	13.9	10.8	8.0	5.7	3.7	2.4	1.5	1.0	.7
	Chronic	4.9	4.0	3.4	2.8	2.2	1.6	1.1	0.7	0.5	.3	.2	.1

20.0	Acute	24.0	19.3	16.6	13.6	10.6	7.9	5.6	3.6	2.4	1.5	1.0	.7
	Chronic	4.8	3.9	3.3	2.7	2.1	1.6	1.1	0.7	0.5	.3	.2	.1
25.0	Acute	16.7	13.5	11.6	9.5	7.4	5.5	4.0	2.6	1.7	1.2	.8	.6
	Chronic	3.3	2.7	2.3	1.9	1.5	1.1	0.8	0.5	0.3	.2	.2	.1
30.0	Acute	11.8	9.6	8.2	6.8	5.3	4.0	2.9	1.9	1.3	.9	.6	.5
	Chronic	2.4	1.9	1.6	1.4	1.1	0.8	0.6	0.4	0.3	.2	.1	.1

TABLE 3b: Criteria For Ammonia Nitrogen -- Warm Water Streams and Lakes
(all values expressed in milligrams per liter as Nitrogen)

Temp. °C		pH											
		6.5	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0
1.0	Acute	49.0	39.5	33.8	27.6	21.4	15.8	11.2	7.1	4.5	2.9	1.8	1.2
	Chronic	9.8	7.9	6.8	5.5	4.3	3.2	2.2	1.4	0.9	0.6	.4	.2
5.0	Acute	46.4	37.4	32.1	26.2	20.3	15.0	10.6	6.8	4.3	2.8	1.8	1.2
	Chronic	9.3	7.5	6.4	5.2	4.1	3.0	2.1	1.4	0.9	.6	.4	.2
10.0	Acute	44.0	35.5	30.5	24.9	19.3	14.3	10.1	6.5	4.1	2.7	1.8	1.2
	Chronic	8.8	7.1	6.1	5.0	3.9	2.9	2.0	1.3	0.8	.5	.4	.2
15.0	Acute	42.3	34.1	29.3	24.0	18.6	13.8	9.8	6.3	4.1	2.7	1.8	1.2
	Chronic	8.5	6.8	5.9	4.8	3.7	2.8	2.0	1.3	0.8	.5	.4	.2
20.0	Acute	41.2	33.3	28.6	23.4	18.2	13.5	9.7	6.2	4.1	2.7	1.8	1.2
	Chronic	8.2	6.7	5.7	4.7	3.6	2.7	1.9	1.2	0.8	.5	.4	.2
25.0	Acute	40.7	32.9	28.3	23.2	18.1	13.5	9.7	6.3	4.2	2.7	1.8	1.2
	Chronic	8.1	6.6	5.7	4.6	3.6	2.7	1.9	1.3	0.8	.5	.4	.2
30.0	Acute	20.4	16.5	14.2	11.7	9.1	6.8	5.0	3.3	2.2	1.5	1.1	.8
	Chronic	4.1	3.3	2.8	2.3	1.8	1.4	1.0	0.7	0.4	.3	.2	.2

TABLE 3c: Criteria For Ammonia Nitrogen -- Limited Resource Streams
(all values expressed in milligrams per liter as Nitrogen)

Temp. °C		pH											
		6.5	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0
1.0	Acute	71.5	57.6	49.4	40.3	31.2	23.0	16.3	10.3	6.6	4.2	2.6	1.7
	Chronic	14.3	11.5	9.9	8.1	6.2	4.6	3.3	2.1	1.3	0.8	.5	.3
5.0	Acute	67.8	54.6	46.8	38.2	29.6	21.9	15.5	9.9	6.3	4.0	2.6	1.7
	Chronic	13.6	10.9	9.4	7.6	5.9	4.4	3.1	2.0	1.3	.8	.5	.3
10.0	Acute	64.2	51.8	44.4	36.3	28.2	20.8	14.8	9.4	6.1	3.9	2.6	1.7
	Chronic	12.8	10.4	8.9	7.3	5.6	4.2	3.0	1.9	1.2	.8	.5	.3

15.0	Acute	61.8	49.8	42.8	35.0	27.2	20.1	14.3	9.2	5.9	3.9	2.6	1.8
	Chronic	12.4	10.0	8.6	7.0	5.4	4.0	2.9	1.8	1.2	.8	.5	.4
20.0	Acute	60.2	48.6	41.7	34.2	26.6	19.7	14.1	9.1	6.0	4.0	2.7	1.9
	Chronic	12.0	9.7	8.3	6.8	5.3	3.9	2.8	1.8	1.2	.8	.5	.4
25.0	Acute	59.4	48.0	41.3	33.8	26.4	19.7	14.2	9.2	6.1	4.0	2.7	1.9
	Chronic	11.9	9.6	8.3	6.8	5.3	3.9	2.8	1.8	1.2	.8	.5	.4
30.0	Acute	29.7	24.1	20.7	17.0	13.3	10.0	7.2	4.8	3.2	2.2	1.6	1.2
	Chronic	5.9	4.8	4.1	3.4	2.7	2.0	1.4	1.0	0.6	.4	.3	.2

ITEM 13. Amend subrule 62.8(2), third sentence, as follows:

Any such effluent limitation shall be determined using a statistically based portion of the calculated on-the-basis-of-a wasteload allocation, as described in "Supporting Document for Iowa Water Quality Management Plans" (Iowa Department of Water, Air and Waste Management, July 1976, Chapter IV, as revised on October-16,-1984 December ____, 1989).

Date

Larry J. Wilson, Director

(A:EP60-61A.MIN/319-89)

11/30/89
RT

DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION
PUBLIC PARTICIPATION RESPONSIVENESS SUMMARY

FOR
REVISED CHAPTER 60, 61 AND 62 ON WATER QUALITY STANDARDS

The attached information constitutes a summary of the written and oral comments received on the above proposed rule revisions. Thirty-seven written comments and numerous oral comments were received during the public hearing period. The comments are grouped into different headings.

RESPONSIVENESS SUMMARY

The following information constitutes a summary of the comments received at six public hearings held statewide on: August 29, 1989, at Elkader and Washington, August 30 at Mason City, August 31 at Des Moines, September 6 at Cherokee and Atlantic. Written comments were received through October 16, 1989. This responsiveness summary address all comments with each comment followed by the name of the commentor, a discussion, and a staff recommendation.

1. Comment: Support for Provision of the Proposed Rules.
(Oral & Written) Commentors support the use of the two number criteria approach, acute and chronic criteria, the concept of providing for site specific criteria modification, the new Limited Resource Warmwater use designations, and the prohibition of discharges into streams entering sinkholes.

Commentors: Dr. Baumann, Des Moines, Denison, H.R. Greene

Discussion: The use of the two number criteria associated with the protection of the aquatic resources appears to provide a new levels of protection not readily existing in the current standards, that being the acute criterion.

Recommendations: No changes warranted.

2. Comment: Item 1, Rule 60.2. Definitions. What is the
(Written) technical significance of the 30 percent value in the losing stream definition.

Commentors: IBP Inc.

Discussion: The 30 percent value is an attempt to identify a type or category of streams where the hydraulic characteristics would result in significant and rapid loss of flow into a shallow aquifer, such as the Karst features of northeast Iowa. These Karst areas have the capabilities to transmit large amounts of surface water and the included pollutants directly into the groundwater.

However, many other Iowa streams may exhibit slow incidental losses of flow into the shallow aquifer with a lesser degree of impact on the groundwater resources. This latter type of losing is not included in this definition.

Recommendations: No changes needed.

3. Comment: Item 1, Rule 60.2 Definitions.
(Written) Chronic toxicity should include a derivation procedure similar to acute toxicity (1/2 96hrLC50). It is not clear how the minimum flow will be used.

Commentors: Des Moines

Discussion: The chronic toxicity represents a method for describing long term health effects of a pollutant to plants or animals. The EPA has developed national guidelines addressing chronic toxicity for numerous pollutants. These guidelines were considered in the development of two number criteria being proposed in the rule revisions. The chronic toxicity provisions and two number criteria are not related to the provisions associated with the prevention of acutely toxic conditions in general streams.

The minimum flow concept represents a flow condition or numerical value used in place of the 7Q10 value. Normally this minimum flow is established when the 7Q10 flow on a designated stream is less than 2 cubic feet per second, cfs.

Recommendations: No changes needed.

4. Comment: Item 3, Rule 61.2(2)b Chemical Integrity.
The department should add a specific time frame or date to when the term 'existing uses' applies.

Commentors: Professional Services Group

Discussion: The term 'existing uses' in the context of the chemical criteria section of the proposed rule, is to refer to present day uses. The uses may for natural or man influenced reasons change. If the quality or use improves, it is expected that the quality or use be maintained. Back-sliding is not allowed.

Recommendations: No changes needed.

5. Comment: Item 5, Rule 61.2(2)d Exceptional Resource
(Written) Waters.
The provision 'water quality management decisions will be made in consideration of the exceptional

value of the resources' appears to be vague and allow for arbitrary decisions.

Commentors: IBP Inc.

Discussion: This provision is not intended to be vague and allow for arbitrary decisions. The provision provides guidance on a wide variety of issues or activities potentially affecting the Mississippi and Missouri Rivers. The provisions are used for decision activities on the Mississippi and Missouri Rivers, such as; NPDES permit issuance and related wasteload allocations calculations, Section 111 Construction Permit on sovereign lands, Section 401 Certification of dredge and fill projects, department's review and comment of environmental impact statements and assessments filed in response to the National Environmental Policy Act (NEPA).

Recommendations: No changes needed.

6. Comment:
(Written)

Item 6, Rule 61.2(2)f High Quality Resource Waters.

The provision for the protection of biological and physical integrity does not cover the naturally occurring activities which will cause silting, channel realignment and other activities.

Commentors: Professional Services Group

Discussion: The department does not understand the intent of this comment. Present water pollution programs are directed toward control on man induced related activities, such as; point sources of pollution, and a variety of nonpoint types of pollution (construction site erosion, stream bed dredging, stream channel realignment)

Recommendations: No changes needed.

7. Comment:
(Oral & Written)

Item 7, Rule 61.2(4). Regulatory Mixing Zones.
The proposed requirements delineating mixing zones and zone of initial dilutions (ZID) are over restrictive and lack technical basis. The size of the zones or amount of stream flow contained within should be increased or some alternative method selected. The ZID should not be considered for streams with zero background flow.

The mixing zone provisions should allow the use of multiple outfalls and multiple mixing zones. The

length restrictions of the juncture of perennial streams and public water supplies are covered in other provisions.

Commentors:

H.R. Greene, IBP Inc., Mt. Pleasant, Marshalltown, Signorney, Clapsaddle Garber, French Reneker, FDL Foods, Cedar Falls, Estherville, Fayette, Cedar Rapids, Independence, Dubuque, T. Allen, Des Moines, Dr. Baumann, Ames, Grundy Center, Sioux City,

Discussion:

The need for specifying a regulatory mixing zone and zone of initial dilution associated with an outfall is to provide adequate passage of aquatic organisms and provided the minimum degree of impact to the biological integrity of the resources. Additionally the proposed language was to provide more specificity on setting the instream location when monitoring for compliance with the water quality standards.

With the input from the Environmental Protection Agency on the usage of their mathematical mixing models and the recent field studies, the modeling equations noted in the Chapter IV Support Document warrant revisions. The revisions need to incorporate the rates of dispersion and influx of instream flow into the allowed mixing zone. In addition, the unusual spatial features naturally occurring in the receiving streams must be considered on a site specific basis. Such features as sand bars, and side channels may influence the amount of flow actually mixing within the receiving stream.

If adequate instream data is available on the characteristics of the mixing zone, the department would use the site specific information in calculating the individual facility's wasteload allocation. It is still important to assure that the dimensions and flow requirements of the zones still be met. Therefore, site specific data would only benefit a discharger in securing a greater flow within the mixing zone than would have been calculated by the mathematical model.

The suggestions to use a larger percentage of the stream flow or to first consider stream flow in setting a regulatory mixing zone is inconsistent with the intent of providing specific dimensions of the zone. That intent was to provide specific locations in the receiving stream where monitoring could be performed to check achievement of the standards. Additionally, by increasing the

percentages of the low flow in the mixing zone to 1/3 or 1/2 of the 7Q10 value will potentially increase the likelihood of causing environmental impacts and reduce the availability of free passage of aquatic organisms.

Multiple outfalls and multiple mixing zones have not been excluded from these proposed rules. However, there are mixing zone provisions to assure that the zones do not overlap and provisions so that they do not cause impairment of the designated use.

The length provisions are not specifically addressed in the other provisions. They serve to point out the types of considerations which are to be used in determining the length of a mixing zone.

The elimination of the Zone of Initial Dilution considerations is logical for streams with zero flow or no protected flow. In practical terms it becomes a moot consideration of the effluent dominated streams as they will typically be general use streams to which the mixing zone provisions do not apply.

Recommendations: The staff recommends that the language for the mixing zone and zone of initial dilution be slightly altered in three areas, natural features interfering with mixing, the regulatory mixing zone dimensions, and the mathematical equation.

The natural influences are to be included in revisions to subrule 61.2(4)"a". The following will be added after the second sentence: Additional details are noted in the "Supporting Document for Iowa Water Quality Management Plans," Chapter IV for considering unusual site specific features such as side channels and sand bars which may influence a mixing zone.

The dimension defined in 61.2(4)"b" to be modified to the following, with the other subsection remaining unchanged:

b. The dimensions of the mixing zone and the zone of initial dilution will be calculated using a mathematical model presented in the "Supporting Document for Iowa Water Quality Management Plans," Chapter IV or from instream studies of the mixing characteristics during low flow. In addition, the most restrictive of the following factors will be met:

(1) The stream flow in the mixing zone may not exceed the most restrictive of the following;

1. Twenty-five percent of the seven-day, ten-year low stream flow for interior streams and rivers, and the Big Sioux and Des Moines Rivers.
2. Ten percent of the seven-day, ten-year low stream flow for the Mississippi and Missouri Rivers.
3. The stream flow contained in the mixing zone at the most restrictive of the applicable mixing zone length criteria, noted below.

(2) The length of the mixing zone below the point of discharge shall be set by the most restrictive of the following:

1. The distance to the juncture of two perennial streams.
2. The distance to a public water supply intake.
3. The distance to the upstream limits of an established recreational area, such as public beaches, and state, county and local parks.
4. The distance to the middle of a crossover point in a stream where the main current flows from one bank across to the opposite bank.
5. The distance to another mixing zone.
6. Not to exceed a distance of 2000 feet.
7. The location where the mixing zone contained the percentages of stream flow noted in subrule 61.2(4)"b"(1) above.

(3) The width of the mixing zone is calculated as the portion of the stream containing the allowed mixing zone stream flow. The mixing zone width will be measured perpendicular to the basic direction of stream flow at the downstream boundary of the mixing zone. This measurement will only consider the distance of continuous water surface.

Additional recommendations are that the mathematical equations which are used to project the width, length, and amount of flow contained within the regulatory mixing zone be corrected to reflect the typical mixing associated with stream and rivers exhibiting near laminar flow. These equations and the technical basis for the equations are included in Chapter IV of the Support Document.

When adequate instream data are available, the wasteload allocation would use the site specific mixing zone information in conjunction with modeling extrapolations as long as the regulatory dimensions requirements of the mixing zone are not exceeded.

8. Comment:
(Written)

Item 7, Rule 61.2(4)"b"(2) Length of Mixing Zone.
Define the term 'a heavily used recreational area'. Define the term 'distance to another mixing zone'.

Commentors:

Association of Business and Industry

Discussion:

The term 'heavily used recreational area' was included to provide guidance on other types of existing water uses which may experience an adverse impact from a regulatory mixing zone. The types of existing water uses potentially experiencing impacts are public beaches, and state, county and local parks along the water body. Confusion of terms can be eliminated by deleting 'heavily used' and including examples of the types of existing recreational areas.

The term 'distance to another mixing zone' indicated that the length of one mixing zone can not overlap another.

Recommendations: The examples of recreational use area are included in the rules on mixing zones. The term 'heavily used' is delete. Subrule 61.2(4)"b"(2)3 is reworded to read: The distance to the upstream limits of an established recreational area, such as public beaches, and state, county and local parks.

9. Comment:

Item 8, Rule 61.2(5) Implementation Strategy.
The rule does not consider stream degradation caused by flushing from flooding or watercourse usage/modification. Additionally, this section's reference to toxic conditions outside of the mixing zone is not specific to point sources.

Commentors:

Professional Services Group

Discussion:

The department is unsure of the intent of the comment. However, this provision is not intended to exclude any natural or nonpoint originating sources of pollution caused from flushing by flood waters. Typically this type of elevated pollutant concentrations fall under the sources termed

uncontrollable nonpoint sources. The controllability consideration from flood water flushing actions would require individual evaluation before the water quality requirements are imposed.

Recommendations: No changes needed.

10. Comment: Item 9. Rule 61.2(5)"c" Site Specific Criteria Modification
Several concerns regarding the proposed rules for site specific criteria modifications were presented: the time constraints on developing such studies, who would fund such studies, are the EPA 1983 handbooks applicable to Iowa, and is it the sole source of the evaluation? The term 'proposed uses' referenced in the rule was confusing since any use is potential.

Commentors: Sioux City, Professional Services Group

Discussion: The proposed rules reflect the existing rule procedure for site specific criteria modification with statements added to clarify the procedural uses and approval of any studies. The department does not intend to develop individual procedures for Iowa studies. The procedures set forth by the EPA documents would be followed as guidelines where applicable.

The use of the term 'potential uses' is to reflect the achievable uses which the waters could achieve if the correctable negative influences of man or other factors, such as channelization, dredging, or flooding influences, were corrected.

Recommendations: No changes needed.

11. Comment: Item 9, Rule 61.2(5)"c" Site Specific Criteria.
(Written) Objection to requiring EPA approval of any Site Specific Criteria Modifications.

Commentors: Cedar Rapids

Discussion: The EPA requires that all provisions of the Water Quality Standards have their approval.

Recommendations: No changes needed.

12. Comment: Item 9, Rule 61.2(5)"c" Site Specific Criteria
(Oral & Written) The proposed rules should provide the opportunity to wastewater treatment facilities to submit field data specific to their facility's receiving stream for use in mixing zone calculations, and background concentrations. Additionally, the rules should allow treatment facilities to submit data that the use of flow variable flow limits will not cause a water quality standards violation.

Commentors: Davenport, H.R. Greene, T. Allen, Signorney,
French Reneker

Discussion: The proposed rules do not specifically address the submittal of additional data from mixing zone studies, upstream water quality sampling or flow variable information. However, the Department has not excluded the submittal of technically sound data for use in calculating wasteload allocations and effluent limitations.

It is proposed in Item 7, Regulatory Mixing Zones, that Major wastewater treatment facilities provide mixing zone information as part of the NPDES permit application.

The concept of flow variable limitations has been allowed for several wastewater treatment facilities who demonstrate the ability to meet water quality standards at stream flow regimes above the 7Q10. This demonstration can be that they can provide the needed treatment during low flow or provide sufficient storage of effluent. This concept will continue to be included in the proposed rules.

Recommendations: The staff recommends adding the following as a new paragraph as subrule 61.2(5)"d".

d. A wastewater treatment facility may submit to the department technically valid instream data which provides additional information to be used in the calculations of their wasteload allocations and effluent limitations. This information would be in association with the low flow characteristics, width length and time of travel associated with the mixing zone or decay rates of various effluent parameters. The wasteload allocation will be calculated considering the applicable data and consistent with the provisions and restrictions in the rules.

13. Comment: Item 10, Rule 61.3(1) General Use Segments.
In the general use segment, the sufficient flow period defines protection for the various uses. As it is a temporary situation, no such restriction should apply.

Commentors: Professional Services Group

Discussion: The policy statement of the water quality standards is to protect and enhance the quality of all waters of the state. The provision to protect the uses on general waters, when sufficient flow exists, is following this policy statement and the other provisions of the standards.

Recommendations: No changes needed.

14. Comment: Item 10, Rule 61.3(1) "a" & "b" Surface Water
(Written) Classifications. Define the terms 'domestic and other incidental water withdrawals', and 'viable aquatic community of significance'.

Commentors: T. Allen

Discussion: Due to the wide variety of uses which Iowans may make of the water resource, this term has remained unspecified. It is intended to include such items as grass watering, small pond recharge, garden watering, etc.

The variations in aquatic populations and communities warrant the unspecified nature of the 'viable aquatic community' term. It is included to provide guidance such that an isolated pool or stream under a stressed condition due to the low flows probably does not warrant a specific use designation.

Recommendations: No changes needed.

15. Comment: Item 10, Rule 61.3(1) "b"(1) Class A Waters.
(Written) The provisions for Class A waters implies that all waters are to be Class A except intermittent waters.

Commentors: Des Moines

Discussion: The department evaluates each stream for it's specific uses prior to recommending appropriate classifications. This evaluation is performed on stream segments or water bodies, not entire

basins. Water bodies do not receive an automatic classification.

Recommendations: No changes needed.

16. Comment: Item 11, Rule 61.3(2) General Water Quality
(Written) Criteria. The general water quality criteria should not apply to the general use waters as they are uncontrollable.

Commentors: Professional Services Group

Discussion: The policy statement of the water quality standards is to protect and enhance the quality of all waters of the state. It is during the period of sufficient flow at which the various uses warrant protection whether the sources of pollution are from point or nonpoint sources.

Recommendations: No changes needed.

17. Comment: Item 11, Rule 61.3(2)"d" General Water Quality
(Written) Criteria. This provision limits the acute toxicity in general streams to human, animal, and plant life. Are fish not included?

Commentors: T. Allen

Discussion: Fish are included in the reference to animals.

Recommendations: No changes needed.

18. Comment: Item 11, Rule 61.3(2)"h" Losing Streams.
(Written) Is it the intent to apply this provision to such streams as the South Skunk River?

Commentors: Ames

Discussion: It is not the intent to apply this provision to streams such as the S. Skunk River. Gaging data has not indicated that this river is losing 30 percent of its flow into the shallow groundwater. It does not fit into that category of stream.

Recommendations: No changes needed.

19. Comment:
(Oral & Written)

Item 12, Rule 61.3(3)"b"(3)2. Specific Water Quality Criteria.

The proposed requirements specify that the chronic criteria be met any time the stream flow equals or exceeds the 7 day, 10 year low flow (7Q10). Suggestions were made to consider seasonal 7Q10 values in lieu of just the annual low flow value. Additionally, the setting of a protected flow in lieu of the 7Q10 should carefully consider the flow regime at which the aquatic resources are supported.

The department should continue to allow wastewater dischargers, municipal and industrial, the opportunity of variable stream flow effluent limits.

Commentors:

Council Bluffs, Ames, Sioux City, Iowa. Great Lakes Sanitary District, H.R. Greene, T. Allen, IBP Inc. Signorney, French Reneker

Discussion:

The purpose of specifying a 7Q10 is to adequately protect the aquatic populations during a significant duration of the varying environmental conditions. This concept of the 7Q10 design stream flow has been widely used by many states and accepted as a sufficient low flow frequency and duration of protection to maintain a viable aquatic population.

It is recognized that there are seasonal variations in the magnitude of low flow in streams with the aquatic resources apparently adapting favorably to these variations. Other provisions of the water quality standards, such as antidegradation, anti-backsliding, may preclude consideration of using seasonal 7Q10 values. Additionally, at this time the state currently lacks gaging data on many streams and rivers for adequate calculations of the seasonal low flows.

The establishment of a protected flow has attempted to reflect the flow regime at which the Class B(Warm) uses will exist in the stream. With the introduction of the Limited Resource Warmwater use designation, it may be appropriate for the current Class B(W) stream with a protected flow to have the Class B(LR) designation. The future use designation evaluations will determine the appropriate flows and designations for all streams.

The department is not proposing to alter the flow variable effluent concept. This concept will continue to be available to treatment facilities with the capabilities to assure water quality standards are met at all flow conditions equal to and above the 7Q10 flow regime.

Recommendations: Until such time as data is available to calculate a seasonal low flow for the various dischargers, and the provisions of anti-backsliding are clarified, it is the staffs recommendation that the annual 7Q10 continue to be used. It is important to provide uniformity in the basis of generating the low stream flow values among wastewater treatment facilities when calculating applicable wasteload allocations. The department will continue to pursue technical assistance from the U.S. Geological Survey in determining the necessary calculation for accurate seasonal low flows when data is available.

The Department will continue to include the procedure for establishing a protected flow in the proposed rules.

No changes in the proposed rules.

20. Comment:
(Written)

Item 12, Rule 61.3(3) Specific Water Quality Criteria.

There is no rule 61.3(2) as referenced in Item 12.

There are no acute and chronic criteria for Class A waters. This does not appear to be consistent with the intent of the regulations.

The use of the acute and chronic criteria in permit limits should be stated.

Commentors:

Des Moines

Discussion:

Item 10 in the proposed rule renumbered the existing subrule 61.3(1) to the proposed subrule 61.3(2).

The only criterion for the protection of primary recreation is fecal coliform and pH. Both do not equate to an acute or chronic concept. It should be noted that a single stream segment or waterbody may be classified as Class A, Class B and Class C when multiple uses are warranted.

The most restrictive of the WLA calculations using the acute and chronic criteria will be used in the

permit derivation procedure. This concept is contained in the referenced Chapter IV, Support Document.

Recommendations: No changes needed.

21. Comment: Item 12, Criteria in Tables 1, 2, 3.
(Written) The references to Table 1, 2, 3 were omitted from subrule 61.3(3)"c" while the tables appear to list Class C criteria.

Commentors: Des Moines

Discussion: Subrule 61.3(3)"b"(3) indicates that for the waters designated as Class C the numerical criteria in Tables 1, 2, 3 apply.

Recommendations: No changes needed.

22. Comment: Item 12, Criteria in Table 2.
(Written) The 16 hour minimum dissolved oxygen for Class B(WW) is equal to the 24 hour minimum. This is not realistic and does not allow for fluctuations.

Commentors: Des Moines

Discussion: This reflects protection for the wide variety of aquatic populations found in the Class B(WW) waters and is consistent with the EPA guidance documentations.

Recommendations: No changes needed.

23. Comment: Item 12, Table 3, Ammonia Criteria.
(Written) The ammonia criteria should be established using the most restrictive criteria documented as being needed and necessary to protect each and every species present in Iowa waters. Calculations should include acute values for species rather than genus values. The increased toxicity to fish at low temperatures should be included.

Because the ammonia criteria are a function of pH and temperature, will the effluent limits be a single year round value or some other frequency?

Commentors: M. Henderson, Des Moines

Discussion: The proposed ammonia criteria followed the EPA recalculation approach which did include the available ammonia toxicity data for aquatic

species present in Iowa waters. In addition, the EPA toxicity equations have incorporated aquatic species responses to the cold temperature toxicity of unionized ammonia. The use of species specific or genus specific toxicity values was made based on the presence of additional species in a genus for which acute toxicity data may not have been available. These considerations were followed under the guidance of technical EPA staff.

The procedures in the Chapter IV Support Document indicates a seasonal type of consideration if it is useable by the discharger. There will be a balance between having numerous limits and realistic consideration of facilities operation.

Recommendations: No changes needed.

24. Comment:
(Oral & Written)

Item 13, Rule 62.8(2). Effluent Limitations Necessary To Meet Water Quality Standards.

The proposed requirement of adding a permit derivation procedure is overly restrictive and not needed. There are already numerous safety factors incorporated into the development of the water quality standards and their criteria.

Commentors:

H.R. Greene, IBP Inc., Mt. Pleasant, Marshalltown, Signorney, French Reneker, T. Allen, Muscatine, Association of Business and Industry, Ames, Sioux City, Estherville, Cedar Rapids, Independence, Professional Services Group

Discussion:

The need for including a permit derivation procedure is presented in the EPA guidance documents. The purpose is to provide statistical confidence that a permit limit for a water quality based parameter will not cause a violation of the standards due to uncertainties in effluent sampling, analytical testing, or plant operation.

The proposed procedure, a modification of the EPA guidance, may not have adequate statistical validity. Therefore, EPA is recommending a simplified approach of applying a multiplier of 0.67 to the WLA when calculating the monthly average permit limit. The daily maximum permit limit would be equal to the WLA. Without additional documentation of effluent variation, monitoring uncertainties, etc., the department can not provide any alternative multiplier.

Recommendation: The staff recommends the use of the EPA simplified approach due to the lack of any statistical data

for numerous Iowa dischargers which would justify using an alternative multiplier. The Chapter IV Support Document would be modified to only reference the EPA simplified procedure where the:
daily maximum permit limit = WLA, and the
monthly average permit = $0.67(WLA)$

Additional Topics Not Referenced To A Specific Rule Item

25. Comment: Lack of Identifiable Benefits.
(Oral & Written) Comments were received that indicated that there would not be any perceivable or identifiable instream benefit or improvement with the implementation of the proposed rules. The consensus was that most Iowa waters are significantly impacted by various nonpoint sources which limit the waters to support any improved resource.

Commentors: Council Bluffs, H.R. Greene, IBP Inc., Marshalltown, Washington. Muscatine, Ames, Maquoketa, Grundy Center, Sioux City, Cedar Falls, Dubuque, French Reneker, FDL Foods, Denison, Sigorney, Estherville, Knoxville, Cedar Rapids, Shellsburg, Independence

Discussion: The impact on many waters within Iowa are being impacted from a variety of nonpoint type of sources. Urban and non-urban sources have contributed and will continue to contribute to the sediment and pollutant loadings entering Iowa waters. Wastewater dischargers will also continue to contribute to the pollutant loadings. However, in many instances the nonpoint influences are significantly less during the low flow conditions. It is during these low flow periods that the point source dischargers typically have the greater impact on the aquatic populations. Therefore, the control programs for both point and nonpoint sources normally are associated with different stream flow regimes yet still providing protection for the populations present all year round.

The identification of implementable control practices for these various sources is an active program within this department and numerous other state and federal agencies. However, the solutions and implementation of the pollutant controls will not materialize quickly. It is the department's objective that the controls of both point sources and nonpoint sources proceed together with the same purpose of enhancing the waters of the state.

Recommendations: No modification proposed at this time.

26. Comment:
(Oral & Written)

Use of Instream Diffusers or Other Means of Rapid Mixing.

The proposed rules should allow for the installation of instream diffuser piping to facilitate more rapid and complete mixing of an effluent with a larger percentage of the receiving stream. Additionally, in lieu of using diffusers, the rules should allow for dischargers to demonstrate that natural mixing had occurred within a larger percentage of the Mississippi or Missouri Rivers than allowed in the mixing zone rules(10%).

Commentors:

FDL Foods, H.R. Greene, Dubuque, Des Moines, Sioux City

Discussion:

The proposed rules do not recognize the use of diffusers in the mixing zone provisions. The proper design and construction of diffuser devices should not cause an impact to the various uses of the receiving stream. However, use of a diffuser may not be feasible for some instances, such as shallow, narrow, or very low flow streams.

Diffuser devices should not be considered as a means to circumvent protection of the chronic criteria. The needed protection to drift organisms, free passage and limited impact to the integrity of the aquatic resource must still be achieved by the diffuser. Therefore, the real benefit to a discharger in considering a diffuser is when their permit limits are governed by the acute criteria.

On the high velocity segments of the Missouri and Mississippi Rivers, the mixing of effluent and stream waters probably occurs very rapidly with limited impact on the receiving stream. Studies demonstrating the rapid mixing characteristics below the outfall would support the allowance of additional flow in the mixing zone. However, the length constraints and the flow constraint for interior streams (25%) still must govern.

Recommendation:

The staff recommends that two new items be added as 61.2(4)"d"(3)&(4), Regulatory Mixing Zones;

(3) The use of a diffuser device to promote rapid mixing of an effluent in a receiving stream will be considered on a case by case basis with its usage as a means for dischargers to comply with an acute numerical criterion.

(4) A discharger to the Mississippi or Missouri Rivers may provide to the department, for

consideration, instream data which technically supports the allowance of an increased percentage of the stream flow contained in the mixing zone due to rapid and complete mixing. Any allowed increase in mixing zone flow would still be governed by the mixing zone length restrictions and the flow restrictions for interior streams.

27. Comment:
(Oral & Written)

pH and Temperature Values Within The Mixing Zone.
The proposed rules should allow for the natural combination of the upstream pH and temperature with the pH and temperature associated with the discharge. The proposed rules did not reflect the actual conditions instead only looked at the upstream pH and temperature.

Commentors:

Council Bluffs, H.R. Greene, IBP Inc.,
Cedar Rapids, Mt. Pleasant, Marshalltown,
Washington. Muscatine, Ames, T. Allen, Maquoketa,
Grundy Center, Sioux City, Cedar Falls,

Discussion:

The proposed rules do use only the upstream pH and temperature in calculating the ammonia instream criteria to be used in the Wasteload Allocation process. Limited field data is available to corroborate the use of the empirical calculation of the mixing zone pH and temperature. With the sensitivity of the ammonia criteria to pH and temperature, it is important that any calculations reflect the natural responses experienced in the mixing zone.

Recommendations: Additional field data will be collected to specifically document the responses to pH and temperature during the mixing of effluent and stream water during the low flow conditions. Particular interest is needed during the summer low flow periods when algal influences on pH are the greatest.

No modification to the rules at this time.

28. Comment:
(Oral & Written)

Background pH and Temperature Impacts.
Iowa's nutrient enriched waters are influenced by both nonpoint and point sources of pollution resulting in very high pH and temperatures during the summer periods of peak algal activity. It is not reasonable to place the burden of pollution control on point sources when the nonpoint sources will continue to have an overriding affect on stream enrichment even during low stream flow.

Commentor: Dr. R. Baumann

Discussion: The proposed rules will reflect the affects of algal activities on the upstream pH and temperature when calculating the ammonia instream criteria to be used in the Wasteload Allocation process. Whether these influences on the instream pH and temperature affects are due to either nonpoint or point sources or both, the aquatic populations will continue to be subjected to the elevated levels. To protect the aquatic resources, the causative agents of the nutrient enrichments warrant control. It is a matter of administratively being able to control the sources.

Efforts are continuing to implement the necessary controls on the nonpoint sources, however, the task is difficult and slow to show a tangible response. It is equally important to continue to maintain a control on the point sources affecting nutrients enrichment as these place a larger role during the low flow periods. The Department recognizes that the controls of nutrient enrichment can not be placed solely on one source. Therefore, the median instream pH and temperature was used in selecting the ammonia criteria, not an extreme value such as the 95th percentile.

Recommendation: No change at this time.

29. Comment: Economic Assessment.
(Oral & Written) The economic assessment provides a limited representation of the complete economic burden of the proposed rules. There is an under estimation of the costs and an over estimation of the benefits. The assessment should as a minimum address a portion of the operation costs associated with the nitrification facilities. This cost could be in the form of power costs for the aeration facilities. The cost/benefit ratio is very small indicating the proposed rules provide little return for the costs to the wastewater treatment facilities. Many facilities have just completed construction of new or upgraded treatment work and lack the funds to proceed with any additional upgrading.

Commentor: Washington, French Reneker, H.R. Greene, Grinnell, Sigorney, Council Bluffs, Estherville, Knoxville, Mt. Pleasant, Denison, Cedar Falls, Sioux City, Grundy Center, Nevada, Maquoketa,

Fayette, IBP Inc., Dubuque, T. Allen,
Independence, FDL Foods, Shellsburg, Marshalltown,
Preston, Clapsaddle Garber, Ames,

Discussion:

The draft economic assessment did not include any costs associated with the operation or maintenance (O&M) of the required facilities. Inclusion of the construction costs was considered as the largest single cost and readily identifiable. Any additional cost item, such as O&M, power, debt retirement, will provide a more accurate representation of the total costs. However, with a very low benefit/cost ratio the inclusion of any additional costs provide a limited contribution to the economic picture.

An important protocol of an economic assessment is to provide the same level of detail for the impacted component (cost to wastewater treatment facilities) and for the benefit component (Iowa's water uses). This assessment attempted to achieve this balance by including quantifiable dollars associated with the subjective type of environmental benefits, i.e., improved fisheries, fishing days, and associated economic worth. Therefore, the economic assessment had a limited scope to facilitate a simple yet representative evaluation of the key items.

The economic costs projected for individual facilities do not reflect the potential level of ammonia removal that may be achievable with the existing treatment facility. Evaluation of individual facility capabilities, and discussion with the department staff will need to occur before any final compliance schedules for upgrading are established.

Recommendations: The final economic assessment will include a introductory statement that the assessment includes only a few of the key items potentially associated with the cost and benefit of the proposed rule. An estimation of the power costs for the nitrification facilities will be included in the annual costs for affected facilities.

No additional changes are needed.

30. Comment:

(Oral & Written)

Instream Assessment of Current Wastewater
Treatment Facilities.

The Department should perform studies to determine if the instream problem exist downstream of wastewater treatment facilities due to the current

water quality standards before adopting more stringent standards.

Commentor: Knoxville, Dubuque, Fayette

Discussion: The Department has relied upon the technical supportive data assembled by EPA which presents the instream criteria necessary to support aquatic species found in Iowa's waters. The numerical criteria in the proposed rules do reflect a recalculation of the national criteria to include the sensitive species found in Iowa's waters. The department has requested additional resources for monitoring.

Recommendation: No change at this time.

31. Comment: Provide Effluent Limits Using The Proposed Rules.
(Oral & Written) The Department should provide the actual effluent limitations for wastewater treatment facilities resulting from the proposed rules. This would allow the affected parties an opportunity to determine their individual impacts from the rules. It is likely that many of the potential ammonia effluent limitations of less than 1 mg/l may not be achievable with conventional biological treatment.

Commentor: Des Moines, IBP Inc.

Discussion: The Department has calculated the expected effluent limitations for selected dischargers considered in the economic assessment document. However, it is not practical to provide individual effluent limitations due to staff and time constraints. The department does not anticipate any ammonia limitations would be established for values less than 1 mg/l. This is due to the modifications in the mixing zone calculations.

Recommendation: No changes needed.

32. Comment: Delay Adoption of the Proposed Rules.
(Oral & Written) The city of Des Moines is assessing the affect that background concentrations will have on their individual wasteload allocation. They ask for a delay on the formal adoption of the proposed rules for 6 months until this assessment can be performed and because the rules are complex and the impacts are extreme.

Commentor: Des Moines

Discussion: The Department recognizes that the background or upstream concentrations of pollutants may be a factor affecting the WLA for an individual facility. However, the presence of a background concentration should not have any influence on the adoption of the rules. These influences must be incorporated into the WLA calculation because they represent additional factors affecting, directly or indirectly, aquatic toxicity.

Recommendation: Recommend no delay in adoption of the rules.

33. Comment: Effluent Dominated Streams.
(Oral & Written) The proposed rules should not place any more stringent requirements on facilities discharging to effluent dominated streams.

Commentors: Ames, Iowa Great Lakes Sanitary District

Discussion: The proposed rules must consider the aquatic resource which can or potentially can support a viable aquatic population during low flows. At the point of discharge, the receiving stream will be evaluated and designated, if warranted, following the use designations guidelines. If the use warrants one of the Class B designations at a downstream location, discharges will be required to provide protection of the applicable numerical criteria. However, it is not the intent of the department to abandon the treatment facility currently under construction in lieu of a facility capable of meeting more stringent limits.

Recommendations: No changes needed.

34. Comment: Consider Algal and Nitrification Influences Within The Mixing Zone.
(Oral & Written)

The proposed rules do not specifically note that the WLA procedures will consider the algal and nitrification loss of ammonia within the mixing zone.

Commentors: Dubuque, T. Allen, Cedar Rapids, Sioux City, H.R. Greene, Clapsaddle Garber

Discussion: Historically the WLA process does include the various fates or losses of ammonia after entering the receiving stream. This is included in the two water quality models used as First Order decay and uptake relationships. The hand dilution calculations do not include these factors since dilution is assumed to be instantaneous.

Due to the short time of travel within the mixing zone, it is not anticipated that the consideration of decay/uptake in the zone will have a significant influence on the effluent limitations. This is particularly true when the effluent limitations are governed by secondary treatment or best available technology. The modeling for algal and nitrification influences of ammonia within the mixing zone may show a difference in the WLA of 0.25mg/l to 0.5 mg/l between including the decay/uptake verses not including any decay/uptake.

Recommendations: The WLA procedure described in the Chapter IV Basin Plan Support Document will be modified to include a nitrification and algal calculation within the mixing zone for facilities requiring ammonia effluent limitations or advanced treatment limits.

No other changes needed.

35. Comment:
(Oral)

Remove Ammonia Nitrogen From The List Of
Parameters Considered As Toxic.

The proposed rules should remove ammonia from the toxics list.

Commentors:

H.R. Greene, Sigorney, French Reneker

Discussion:

The present EPA guidance clearly suggests that ammonia should be handled the same as a toxic parameter since it exhibits toxic influences on aquatic species in a rapid manner when introduced into a receiving stream. The department is proposing to follow a similar approach where for all parameters, except CBOD, the instream numerical criteria will be met at the boundary of the mixing zone. The CBOD effluent limitations will be established to assure compliance of the dissolved oxygen criteria. The critical dissolved oxygen location, or D.O., sag is typically at a stream location downstream of the mixing zone.

The calculation of an ammonia WLA can consider the uptake/decay of ammonia within the mixing zone. However, conventional toxics, such as heavy metals do not exhibit the same type of naturally occurring uptake/decay as ammonia. This consideration for ammonia decay/uptake is being included in an above item.

Recommendations: No changes needed.

36. Comment: Establishing Maximum pH and Temperature Limits for Industries.
(Oral)

The proposed rules should establish maximum permit limits for industrial treatment facilities, but should not for municipalities.

Commentors: T. Allen

Discussion: The impact to the designated uses of the receiving stream will be the same whether the pollutant originates from a domestic treatment facility or an industrial facility. Aquatic protection is warranted regardless of the pollution sources.

It is not envisioned that specific pH or temperature limits would normally be required for domestic facilities which have water quality based ammonia limits.

Recommendations: No changes needed.

37. Comment: Acutely Toxic Calculations.
(Oral & Written)

The proposed rules or referenced documents do not include any support for the 1/2 factor used in association with the 96hr LC₅₀ calculations for preventing acutely toxic conditions.

Commentors: T. Allen, Des Moines

Discussion: The use of the 1/2 factor represents the anticipated relationship between the 96hour Lethal Concentration at which 50 percent of the test organisms die (96hrLC₅₀) and a 96hr Lethal Concentration at which zero percent die (96hrLC₀). It is the latter which the department considers as the instream concentration which would provide the necessary protection for aquatic species in general classified streams. This factor has been used by other states and is within the range suggested by EPA toxicologists.

Recommendations: No changes needed.

38. Comment: Dissolved Oxygen Criteria.
(Written)

The proposed rules do not denote the location where the dissolved oxygen criteria will be met.

Commentors: T. Allen

Discussion: The dissolved oxygen criteria must be met at all locations beyond the mixing zone.

Recommendations: No changes needed.

39. Comment: Big Creek Use Assessment.
(Oral & Written) The department should consider the submitted aquatic assessment performed by Mt. Pleasant.

Commentors: Mt. Pleasant

Discussion: This is not a subject of the proposed rules, but the department will consider the submitted report in addition to using the procedure in the use assessment evaluations for stream designations to be completed in early 1990.

Recommendations: No changes needed at this time.

40. Comment: Basis of the Ammonia Criteria .
(Written) What is the basis of the proposed ammonia criteria, how was it established and does it represent stream study results or an extrapolation of laboratory data?

Commentors: FDL Foods

Discussion: The basis of the proposed ammonia criteria is the recalculating of the national criteria to reflect the aquatic species present in Iowa's streams and lakes. This recalculation was performed by the state for each of the designated uses. The development of the national criteria used extensive laboratory data.

A field comparison was performed by the EPA contractor in Iowa to assess if there were any local influences which may alter the aquatic responses to ammonia toxicity. The Iowa study did not demonstrate any unique influences.

Recommendations: No changes needed.

41. Comment: Instream Monitoring.
(Written) Will the department require instream monitoring to determine compliance of the water quality standards?

Commentors: IBP Inc.

Discussion: The department believes the water quality based permit limits will assure that the water quality standards are met. Additionally, the department believes that additional stream monitoring by

permit holders is a benefit to both the permittee and DNR. It is expected that permits will contain stream monitoring requirements.

Recommendations: No changes needed.

42. Comment:
(Written)

Impacts of Nitrification on Water Supplies.
Has the department considered the impact of increased biological nitrification and nitrate in the surface waters as it may affect water supplies?

Commentors: IBP Inc.

Discussion: The increased discharge of wastewater from a biological nitrification process into receiving streams and any additional nitrate loading to the streams are not expected to impact a surface water supply. Whether the ammonia in a discharge is in the ammonia form or the nitrate form has little or no impact on the nitrate levels at the point of water withdrawal. Natural biological processes in the receiving stream convert the ammonia to the nitrate form.

Recommendations: No changes needed.

43. Comment:
(Written)

CBOD.
It is suggested that the proposed rules allow replacing the BOD limits with a CBOD limit.

Commentors: IBP Inc.

Discussion: The proposed water quality standards are not the place to resolve the issue of Carbonaceous Biochemical Oxygen Demand (CBOD). This parameter is established as a method of measuring effluent quality for publicly owned treatment works. Categorical guidelines are used for industry.

Recommendations: No changes needed.

44. Comment:
(Written)

Reasonable Testing Requirements.
The department should adopt language that allows for reasonable testing and development of treatment methods without the immediate danger of enforcement actions, particularly for Total Residual Chlorine.

Commentors: IBP Inc., Des Moines

Discussion: The water quality criteria are instream values representative of the needed levels to protect aquatic resources. It is recognized that the proposed rules may require major modifications to treatment facilities to achieve compliance with effluent limitations. Any compliance requirements would be subject to the discussions in the permitting process. The design, monitoring, and implementation of the criteria must and will account for the technical capabilities in setting reasonable detectable values.

Recommendations: No changes needed.

45. Comment: Negative Environmental Impact.
(Written) The commentor requested that the Negative Environmental Impacts should be reviewed and reported prior to making any final decisions. The following issues need to be addressed: increased air pollution and loss of fossil fuels burned to meet the electric needs of nitrification process, increased use of chemicals to maintain process balance, and the environmental impacts caused by construction at treatment plants (i.e., erosion, dust, noise, and possible use of wetlands, scenic river areas, and additional farm ground for construction sites).

Commentors: Marshalltown

Discussion: Wastewater treatment facilities already exist to provide protection for the receiving stream's aquatic populations. The issues noted are superfluous and are no more valid for these water quality standards than for any other major construction activity.

Recommendations: No changes needed.

46. Comment: Drainage Ditches. Drainage ditches should have their own designated or protected use in order to assure the ability to provide cleanout and other maintenance or repair activities. These activities should have priority over all other uses for the drainage ditches designated as Class B(LR) or general use water, without mitigation. The antidegradation provisions appear to prevent maintenance of the ditches since this type of activity will affect the physical and biological integrity of the waters.

Commentors: D. Glasnaps, Etler Engineering

Discussion:

The proposed rules are not intended to prevent the maintenance of drainage ditches. However, it is important to recognize any aquatic resources which have adapted to the altered habitat, particularly if the alterations occurred many years ago. It would be inconsistent with the policy of the water quality standards, which is to protect and enhance the quality of all waters, if the standards were to ignore the resources which may have adapted to the altered habitat.

Some drainage ditches have the characteristics of ditches while others have the characteristics of more natural rivers. The critical need is to look at what the impacts on the resource may be from the potential clean out. This evaluation of impacts will be dealt with on a case by case basis as they arise.

Recommendations: No changes needed.

47. Comment:
(Written)

Total Residual Chlorine Criteria.

The TRC criteria appears to be overly restrictive. Is it to protect aquatic insects or fish?

Commentors:

T. Allen

Discussion:

The development of the TRC criteria values reflect the entire spectrum of aquatic organisms present in Iowa waters. The most sensitive species used in the recalculation of the national criteria to a criteria for Iowa was a snail.

Recommendations: No changes needed.

48. Comment:
(Written)

Metals Toxicity.

Research is warranted into the toxicity of Heavy Metals found in Iowa waters. Some of them bind to oxides, sulfides, or hydroxides and are less toxic than in disassociated form.

Commentors:

T. Allen

Discussion:

The development of the national criteria evaluated the various forms of the metals found in aquatic environmental and their corresponding toxicity to aquatic organisms. At this time the state is not in a position to develop our own numerical criteria. In addition, there are no indications that procedures carried out in the development of the national criteria are not applicable for Iowa waters.

Recommendations: No changes needed.

49. Comment: Industrial Contributions to Municipal Facilities.
(Written) Will a municipal discharger be able to obtain a waiver of permit limits, if the contributing industries are providing BAT?

Commentors: T. Allen

Discussion: No provisions are included in the proposed rules to allow this type of waiver. This concept would be inconsistent with the water quality standards and water quality based permit limits.

Recommendations: No changes needed.

50. Comment: Credit to Lagoon Systems.
(Written) In the implementation process, what credit is being given to lagoon systems having high Dissolved Oxygen and algal concentrations?

Commentors: T. Allen

Discussion: The WLA process will incorporate the systems elevated concentrations as input values when stream modeling is required.

Recommendations: No changes needed.

51. Comment: Dry Run Creeks.
(Written) The proposed rules should include the ammonia limits and heavy metals limits to be allowed in dry run and unclassified stream reaches.

Commentors: T. Allen

Discussion: The proposed rules do note the basis for the ammonia and metals levels to be allowed in these types of waters. The use of 1/2 of the 96hrLC₅₀ concentration for the sensitive aquatic species represents the level of protection necessary to meet the provisions of preventing acutely toxic conditions. This concentration may also represent the effluent limit if no natural flow exists in the receiving stream.

Recommendations: No changes needed.

52. Comment: Implementation.
(Written) Does the 10 year provision in the Iowa Code, which precludes more stringent standards from being imposed, apply to these proposed rules?

Commentors: Fayette

Discussion: Yes, if the provisions associated with that section of the code are met, such as; proper operation of the facility, and compliance with permit limitations.

Recommendations: No changes needed.

53. Comment: Shoreline Outfalls.
(Written) Surface discharges at the shoreline should be disallowed and according to the Technical Support Document, are not recommended.

Commentors: M. Henderson

Discussion: The use of the mixing zone provides for a reduction of the impacts of shoreline discharges. The EPA Technical Support Document is not a requirement, but a recommendation. The purposes and restrictions of the mixing zone can be met by a shoreline discharge as long as the mixing zone criteria and the necessary aquatic criteria are met.

Recommendations: No changes needed.

54. Comment: Non-Water Quality Standards Comments.
(Written) The public should always have access to effluent discharge pipes for compliance monitoring by the agency or other concerned citizens.

For point source polluters who are out of compliance or who may be discharging illegally, 24 hr. monitoring of effluent should be conducted weekly to examine their discharge patterns.

Only certified laboratories should be allowed to monitor, test, and report required permit studies and chemical analysis.

The use of Toxicity Reduction Evaluations should be used wherever continuous or constant violations occur.

Specific enforcement policies and procedures should be established which force compliance and punish offenders.

Criminal prosecution should be brought against all persons that knowingly, willfully, and flagrantly violate clean water standards and regulations.

Biological and ecological studies should be conducted whenever significant violations have occurred. Toxicity studies should be conducted on any and all species which suffer from pollution discharges that affect population dynamics or bio-diversity.

Periodical testing by an independent laboratory should be conducted for chemicals listed under Title III of SARA for all priority pollutants. This analysis should be part of a larger and comprehensive toxics control issue and should be included a mass balance accounting for all priority pollutant chemicals. Data collection should and must be part of an ongoing ecological analysis of Iowa ecosystems. The role of the agency should include additional and advanced data collection and incorporation into useable and easily retrievable computer formats.

U.S. Fish & Wildlife Service must participate in NPDES permit process.

Hydrogeological analysis should be conducted within 30 days of discovery of significant toxic spills.

Compliance monitoring of suspect laboratory analysis should be run periodically, including un-announced inspections and sampling by the agency.

Publication in local newspaper of notice of violations by any permit holder. The local community should be informed at all times of pollution violations.

Commentors: M. Henderson

Discussion: The comments are not germane to the water quality standards provisions.

Recommendations: No changes needed.

55. Comment:
(Written)

Zone of Initial Dilution.

It is recommended that the provisions contained in the Technical Support Document for the zone of initial dilution be specifically followed.

Commentors:

M. Henderson

Discussion:

The proposed Zone of Initial Dilution provisions have been reviewed and agreed upon by EPA Region VII.

The Technical Support Document provisions for the zone of initial dilution are associated for the use of the criterion maximum concentration (CMC). The department has not proposed to adopt the CMC approach, but rather state recalculated values. Through the small size restrictions imposed on the zone of initial dilution by the proposed rule, the EPA guidance of prevention of lethality to only minutes of exposure (See pg.33 of the TSD) is met. Beyond this zone lethality is prevented.

Recommendations: No changes needed.

56. Comment:
(Written)

Evidentiary Hearing Process.

It is recommended that a provision be included for evidentiary hearing as allowed under the federal Clean Water Act.

Commentors:

M. Henderson

Discussion:

This comments relates to NPDES permits and is not germane to the proposed rules.

Recommendations: No changes needed.

A copy of the Economic Assessment and written comments are on file in the department's Records Center.

Mr. Stokes stated that these rules have been in the making for the past year, have been out to public hearing twice, and have had an economic impact statement prepared. He noted that several individuals were present who would like to make comments.

APPOINTMENT - DON ETLER

Don Etler, Consulting Agricultural Engineer, addressed the Commission stating that he is principally involved with drainage districts in North Central Iowa and he is speaking for himself as well as the interests of the Boards of Supervisors in Palo Alto and Pocahontas counties. He distributed copies of a letter he wrote the Commissioners regarding drainage district concerns with water quality standards. He stated that his company filed comment #46 in the Responsiveness Summary and it addressed the concerns of strict enforcement of protected designated uses which include drainage ditches. He added that their comments requested some recognition of drainage districts as well as regulatory relief if possible, and staff recommendation is that there be no change. Mr. Etler expanded on concerns in regards to Protected Uses and also concerns with Section 401 Water Quality Certification for Corps of Engineers Section 404 Permits. He presented a slide series of the Grover's Lake project and stated that it is in violation of 404 permit regulations. In conclusion, Mr. Etler requested the Commission to amend the water quality standards to provide for reasonable regulatory relief for Iowa's drainage districts and the landowners therein. He also requested that common sense minimum activities be allowed under the rules.

PUBLIC PARTICIPATION

Kent Sovern

Kent Sovern, Director of Legal Services for the League of Iowa Municipalities read the following letter from Peter King, Executive Director of the League:

Members of the Commission:

On behalf of Iowa's 952 municipalities, operating 341 water treatment facilities, I am writing to state our very serious reservations over the proposed rules amending Chapters 60, 61 and 62 of the Iowa Administrative Code regarding water quality standards. The League of Iowa Municipalities formally request to

the Commission to delay implementation of the proposed rules for a minimum of six months.

Our objections to the proposed rules fall into two categories. First, we are not convinced--nor do Department of Natural Resources (DNR) or the U.S. Environmental Protection Agency (EPA) studies demonstrate convincingly -- that the proposed rules will result in an appreciable improvement or difference in the quality of water in the 2,100 stream miles affected.

Our second objection is neither scientific nor technical in nature. It is, however, just as important. It deals with the real life, immediate fact that the rules will require municipal governments affected to expend about \$580.6 million to construct or upgrade wastewater treatment facilities not including ongoing operational costs. The DNR Water Quality Planning Section draft report FFY89 Water Quality Standards Revisions Estimated Impact and Benefits dated November 29, 1989, clearly states the estimated economic impact. Construction cost is estimated to be \$601.1 million (\$580.6 million municipal and \$20.5 private industry) and the economic benefit is estimated to be \$6.0 million annually for the 2,100 stream miles anticipated to experience a benefit if, in fact, the benefits become reality. Locally - elected municipal officials certainly support a common goal of clean and safe water. But at a cost/benefit ration of 100 to 1 for a marginal change in water quality?

In the real world of day-to-day municipal government, officials must consider these critical factors: when faced with mandates of this type what improvement in quality will result, how much will it cost, and who is going to pay. Without question, the proposed rules, if adopted, will place an extremely heavy financial burden on municipalities - in many cases an unbearable burden on municipal government. Many cities have significant debt from construcion of current facilities, all have a limit on bonding capacity and rates/user fees have, in many cases, already reached politically unacceptable levels. Funding from state and federal sources is limited if non-existent, and the horizon for federal and/or state funds looks just as bleak.

While we recognize your charge is to establish water quality standards, such activities cannot be taken without concern and sensitivity to the financial impact. We strongly urge you to delay implementation, direct DNR staff to renew negotiations with representatives of EPA, and allow for some form of state or federal financing to be in place before moving forward.

We appreciate the opportunity to present the views of Iowa's 952 municipalities and look forward to continuing to work with you and representatives of the Department. If there are any questions, please feel free to contact me, Kent Sovern or Dean Schade at 515/244-7282.

Mr. Sovern stated that the League is in the process of preparing legislative proposals for the next session to address financing in connection with these rules.

Craig Olson

Craig Olson, City of Dubuque, spoke of his involvement with stream sampling studies and expressed concerns with the criteria that relates to the ammonia nitrogen concentration that will be allowed under these rules. He noted that in his studies he found ammonia nitrogen had minimal, if any effect, upon the stream. He stated that in looking at the economic document accompanying the rules he would question the six million dollar/year environmental benefit as being anticipated for implementing the rules. Mr. Olson noted that there are areas in the state where lowering of the ammonia concentration in sewage effluents will benefit the streams, but in most cases he does not believe that will happen. He added that he does not want to see the water quality degraded, but at the same time he does not want to see millions of dollars wasted and get zero benefit from it.

Ted Payseur

Ted Payseur, Veenstra and Kimm Engineering, addressed the Commission and noted that he is also acting as the National Director for the Iowa Water Pollution Control Association. He stated that they are in favor of any laws to improve the environment, but the problem is how and where to best spend their money. Mr. Payseur stated that the state is looking at causing an expense of \$600,000,000 to work primarily on one potentially toxic agent (ammonia). He added that the Commission will need to address whether they are putting us in a difficult situation where our laws are more stringent than other states in the midwest area. He expressed concern over what levels ammonia is toxic at. In conclusion, he stated that their recommendation would be to postpone the rules for six months or until such time concerned parties have an opportunity to develop regulations everyone can live with.

George Milligan

George Milligan, City of Cedar Rapids, addressed the Commission stating that he is in support of what Mr. Olson and Mr. Payseur previously stated. He added that before money is spent for marginal and questionable benefit, now is the opportune time to get some data to see if this what is really needed.

Mr. Stokes displayed overheads in review of the Water Quality Standards Revisions as required by the federal Clean Water Act. This Act requires that each state review its water quality standards at least once every three years. He presented a history of the department's water quality standards and revisions since 1972.

Mr. Stokes explained the changes which were made to this set of rules as a result of public comments. He stated that for the last four years the department has been discussing with EPA the issue as to the application of the federal government's requirements particularly as they relate to ammonia.

Mr. Stokes noted that, in addition to having an economic impact statement prepared, the Water Quality Standards rules have gone out to public comment twice and six public hearings were held each time. Additionally, a technical committee made up of representatives from various interested groups reviewed the rules. Mr. Stokes presented the following options the Commission might take in regards to adopting the rules: 1) Adopt rule revisions as presented today; 2) Adopt rules without ammonia modifications; 3) Adopt rule revisions with modifications to the ammonia standards as proposed; 4) Delay adoption of rules for specified (short) time period for further review; 5) Withdraw rulemaking (no action alternative). Mr. Stokes stated that staff is asking approval of the rules as presented. He added that EPA is under a congressional mandate to address toxics which are addressed by the proposed standards for 14 additional pollutant parameters. Mr. Stokes recommended that the Commission, at the very least, adopt the 14 parameters absent the ammonia concentration requirement. He stated that EPA is placing a great deal of pressure on states to better address the toxic effects of ammonia on aquatic life.

A lengthy discussion followed.

Motion was made by Nancy Lee Siebenmann to adopt Final Rule--Chapters 60, 61, and 62, Water Quality Standards as applied to the 14 synthetic compounds so named, but without the ammonia modifications until they can be further assessed as to their cost benefit. Seconded by Richard Hartsuck.

Mr. Stokes stated that for the sake of clarity, staff can re-tailor the rules to be sure that the ammonia requirements are retained as they are at present time, then bring the rules back next month so the Commission can see what they are adopting.

Clark Yeager asked what the process would be to address the concerns expressed by Mr. Etler.

Mr. Stokes responded that Mr. Etler's concerns would need to be addressed as another complete issue. He added that the department, in the early 80's, made a conscious decision not to sign off carte blanc just because the Corps of Engineers decided to make decisions determined by the size of an area. The department does their review on dredge or fill projects on a case-by-case basis.

Margaret Prahl stated that she is concerned about whether the change made by Commissioner Siebenmann's motion is major enough to warrant taking the rule back out to public review.

Mrs. Prahl moved to table Commissioner Siebenmann's motion until next month when the Commission will have an opportunity to look at the rules as changed to see the results of that motion. Seconded by Gary Priebe.

Nancylee Siebenmann stated that she has no objection to Commissioner Prahl's motion. This being a non-debatable motion, Richard Hartsuck concurred.

Chairperson Mohr requested a roll call vote. "Aye" vote was cast by Commissioners Earley, Ehm, King, Prahl, Priebe, and Siebenmann. "Nay" vote was cast by Commissioners Hartsuck, Yeager, and Mohr. Motion carried on a vote of 6-Aye to 3-Nay.

Margaret Prahl requested that staff do as suggested and give the Commission, in their homework, an indication of what the rules would look like without the ammonia modifications, and include a response to the question on whether it will need to go back to public hearing.

Gary Priebe commented that he thought the drainage ditch question was handled years ago, and he asked if these rules will change the drainage ditch issue or if they will basically be the same.

Mr. Stokes responded that he will provide a full discussion on that at the next meeting.

REFERRALS TO THE ATTORNEY GENERAL

Mike Murphy, Bureau Chief, Legal Services Bureau, presented the following item.

The Director requests the referral of the following to the Attorney General for appropriate legal action. Litigation reports have been provided to the Commissioners and are confidential pursuant to Iowa Code section 22.7(4).

Monfort, Inc. (Des Moines - wastewater
Domenic Giammetta, d/b/a Fred's 66 (Davenport) - underground tanks
Soo Line Railroad Co. (Mason City) - hazardous condition

Monfort, Inc.

Mike Murphy stated that staff is asking that Monfort, Inc. be referred due to illegal wastewater discharges. He noted that he has received some clarification on the name that this company should be under. What was previously known as Swift Packing Company in Des Moines is now doing business under the name of Monfort, Inc. Apparently, Swift (SIPCO) was purchased by ConAgra, Inc. but they did not obtain the right to operate this

plant under the name of SIPCO, so they are doing business under the name of one of ConAgra's wholly owned subsidiaries which is Monfort. Staff is asking that they be referred due to discharge of high strength organic waste on August 24 and October 16 of this year. The organic waste from some solids handling facilities got into the city storm sewer and then discharged to the Des Moines River. The company was approached on this matter on August 24 and informed that it was prohibited, and they were asked to cease it. Mr. Murphy stated that the same violation was observed in October and staff feels it is serious enough to warrant referral.

APPOINTMENT - KAY NORTON

Kay Norton

Kay Norton, Vice President for Legal and Government Affairs at Monfort, addressed the Commission stating there is a misunderstanding about what happened, about Monforts intentions, and about future plans. She stated that a DNR inspector came in August to inspect their paunch handling facility and discovered there was a backflow from an area into the storm sewer. She explained that operation of the system is not dependent upon a pump, as mentioned in the litigation report. The scupper of the drainage facility had become plugged and resulted in a backup against the design of the system. She related that, after receiving oral notification from DNR, the problem was corrected that day. In October, a similar situation occurred which turned out to be the result of a defective valve and it was fixed the same day. Ms. Norton stated that the company is aware that such discharges are not acceptable. She explained what they have done to prevent even an inadvertant discharge from proceeding into the storm water system. In conclusion, Ms. Norton stated that she believes very strongly that these discharges were inadvertant on the company's part and was not due to whether a pump was on or off.

Margaret Prah1 asked if there is any effort to work out a consent decree.

Mr. Murphy responded that the Environmental Protection Division requested referral because they felt that the appearances, and what they were able to document, indicated that it was a serious violation.

Motion was made by Mike Earley for referral to the Attorney General's Office. Seconded by Rozanne King.

Chairperson Mohr requested a roll call vote. "Aye" vote was cast by Commissioners Earley, Ehm, Hartsuck, King, Prah1, Siebenmann,

Yeager, and Mohr. "Nay" vote was cast by Commissioner Priebe. Motion carried on a vote of 8-Aye to 1-Nay.

Margaret Prah1 asked that staff recommend to the Attorney General that a consent decree be pursued before any action is filed.

Dominic Giammetta

Mr. Murphy asked that Mark Landa make the staff's presentation since he was the staff person who worked on this case.

Mr. Landa stated that the department has made the determination that gasoline has been released from a service station owned and operated by Mr. Giammetta. He displayed overheads showing the area where the station is located and the area of contamination. Mr. Landa presented a detailed history of the case. He stated that they omitted an Amoco station directly across from Mr. Giammetta's property as a source of the contamination because of the direction of the groundwater flow. Also, Iowa Machine Shed was found to be an unlikely source because of the gradient of the groundwater flow. Mr. Landa stated that Mr. Giammetta submitted analysis from a soil sample which detected the contamination was from leaded gasoline. Mr. Giammetta asserted that because of that analysis the contamination was not caused from his station since he had a known leak of unleaded gasoline. Mr. Landa stated that information he received from the American Petroleum Institute regarding lead content in gasoline is contrary to the opinion of Mr. Giammetta's lab. He related that using lead as a parameter for identifying a source of gasoline is misleading and certainly not conclusive. He noted that Mr. Giammetta has investigated the leak as requested by the department, but he will also need to submit a remedial action plan.

APPOINTMENT - DOMENIC GIAMETTA

Domenic Giametta, owner of Fred's 66, stated that he has spent \$20,000 to investigate the leak, but it still has not satisfied the problem. He related that he does not feel that he is the sole problem in the case. He noted that a station across the street had a severe leak which was taken care of, and across from the fire hydrant there are three 10,000 gallon abandoned tanks. Mr. Giametta indicated that he is suspicious of the owner of Iowa Machine Shed because he refused to allow Terracon to do sample drillings on his property. He stated that his station had a twisted coupling which was dripping at a very slow rate. Mr. Giammetta's contention is that since a sample showed the tested soil to contain leaded gasoline it could not have come from his station because he has only unleaded gas. He added that he is not responsible for contamination which is 150 yards from his property, but he will take responsibility for the dripping leak.

A lengthy discussion followed on various issues in the case.

Motion was made by Margaret Prahl for referral to the Attorney General's Office. Seconded by Gary Priebe. Motion carried unanimously.

Soo Line Railroad Company

Mr. Murphy asked the Commission to table this case as staff is working on a settlement with the company.

Motion was made by William Ehm to table the Soo Line Railroad Company referral until the January meeting. Seconded by Clark Yeager. Motion carried unanimously.

STATUTORY MANDATES AND DEADLINES

Mike Murhpy, Bureau Chief, Legal Services Bureau, presented the following item.

Mr. Murphy distributed the following list of mandates the Commission is obligated to perform. Also distributed was a list of commonly used acronyms.

Below is a list of mandates the Commission is obligated to perform, which have not been completed or which are due on a recurring basis. This list includes mandates that apply specifically to the Commission. Not included are Commission mandates that have already been performed but are updated on a periodic, indefinite basis, e.g. the numerous rulemaking areas in which we already have rules. Also not included are requirements negotiated or imposed by EPA through annual agreements, etc. This list is derived from the Iowa Code.

Mandate	Code Provision	Deadline?	Lead
Organizational meeting	455A.6(4)	May, odd years	Director
Meet	455A.6(4)	Quarterly minimum	Director
Report to Governor/GA	455B.105(6)	Every June	CID
Lab certification rules	455B.113	No	EPD

SOC monitoring rules	455B.173(6)	No	EPD
Water Plan Update	455B.262	January, '90,'95, '00,'05	EPD
Flood Plain Mapping Progress Reports	455B.262	June, even years	EPD
GW Protection Plan Progress Reports	455B.263(1)	January, odd years	CID
Landfill rules - gas shafts	455B.304	No	EPD
Landfill operator certification rules	455B.304	7-1-90	EPD
Infectious waste program	455B.490	No	WMAD
Used tank disposal rules	455B.490A	No	WMAD
Waste reduction/ recycling rules	455D.7	4-1-92	WMAD
Waste abatement fees recommendations	455D.8	Annual GA	WMAD
Yard waste rules	455D.9	7-1-90	WMAD
Waste tire program	455D.11	1-1-91	WMAD
Sludge ash study	H.F.778	3-1-90	EPD

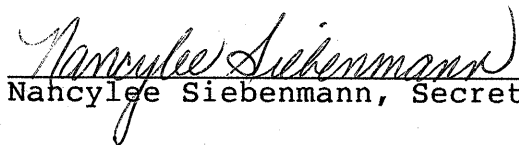
This was an informational item; no action was required.

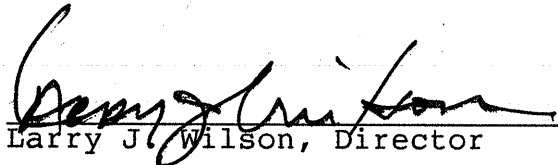
GENERAL DISCUSSION ITEMS

Chairperson Mohr reminded Commissioners to call legislators in their area to extend an invitation to the legislative reception in January. A follow up letter of invitation will be sent.

ADJOURNMENT

With no further business to come before the Environmental Protection Commission, Chairperson Mohr adjourned the meeting at 6:05 p.m., Monday, December 11, 1989


Nancy Lee Siebenmann, Secretary


Larry J. Wilson, Director

December 1989

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